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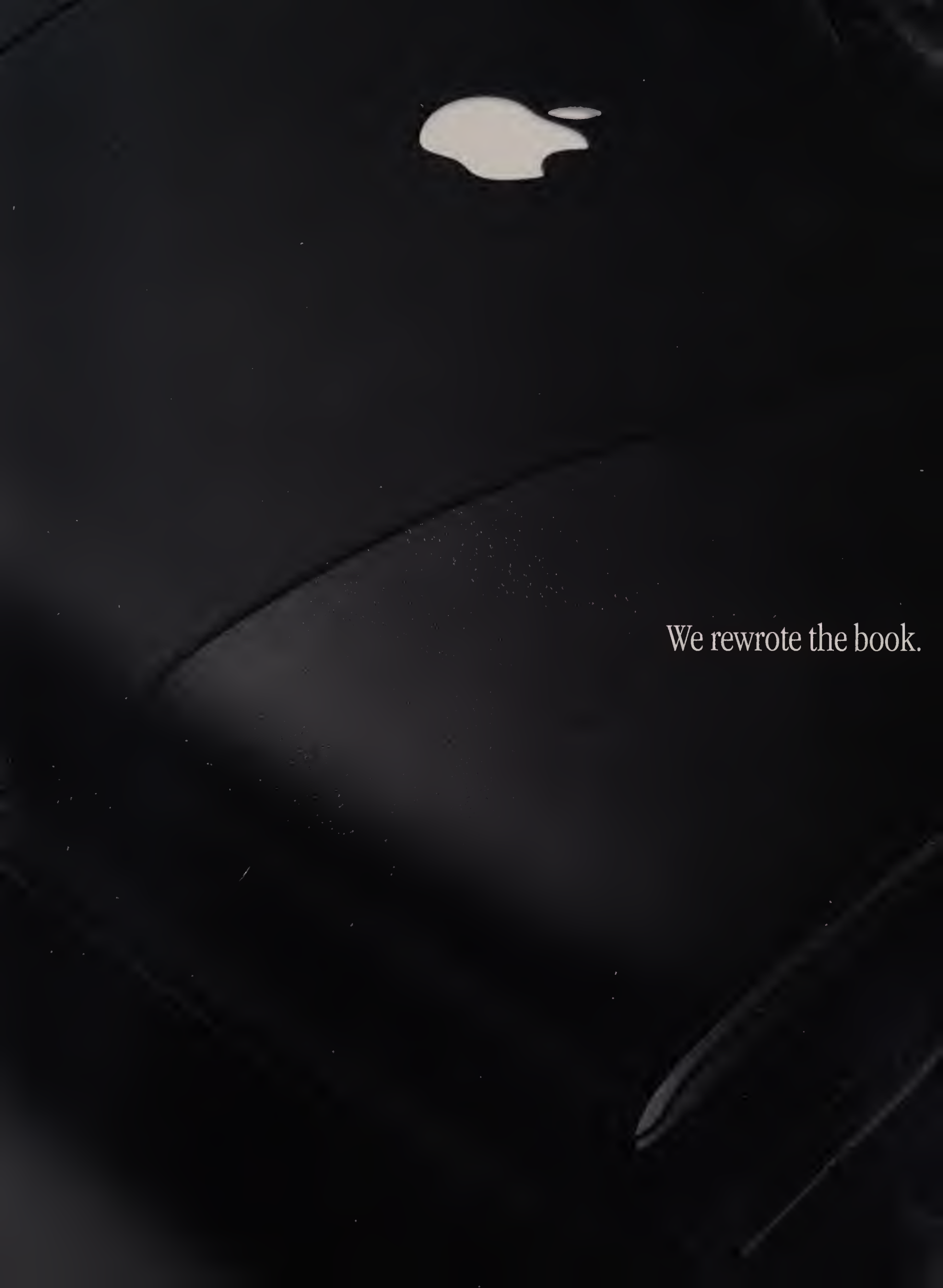
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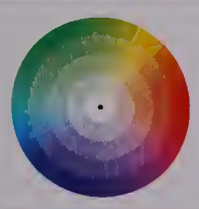
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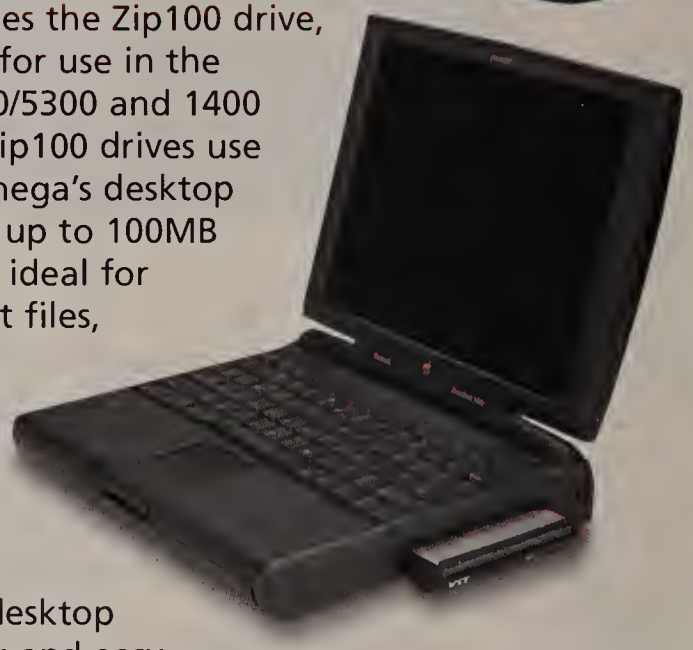
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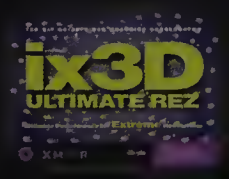
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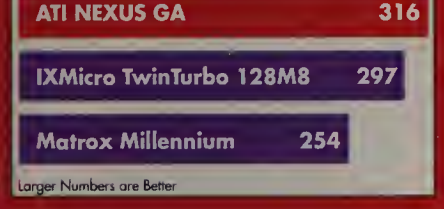
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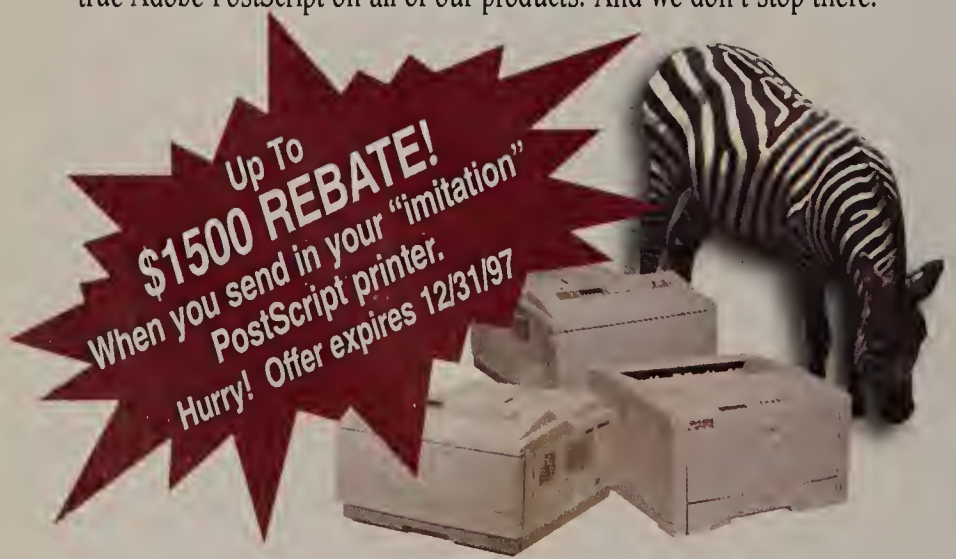


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Letters

Apple-soft?

CONGRATULATIONS, *MACWORLD*, for realistically reporting on the alliance that former rivals Microsoft and Apple have recently formed ("Apple Forges Alliance with Microsoft," *News*, October 1997). Your coverage should be compared with the ridiculous media babble usually associated with Apple. Thank you for focusing on Apple's recent accomplishments, steadfast visions, and ambitious hopes for the future. With or without outside assistance, Apple Computer will continue its culture of innovation and determination, constantly creating new standards for others to follow.

DYLAN RHEA
Dallas, Texas



THIS WHOLE APPLE-MICROSOFT deal brings to mind scenes from the Frank Capra movie *It's a Wonderful Life*. I'm not going as far as to say that the whole town will show up to save the day, or that Steve Jobs and Bill Gates can't *really* work together to make the world a better place. I just hope that this alliance does not reduce Apple to a puppet government and that the geniuses behind the Macintosh don't simply become another bunch of left-brained, memo-writing, number-crunching calculators.

JASON D. PALMER
Darien, Georgia

Communicator Is Overrated

PAUL DEVINE IS ONLY HALF RIGHT when he praises Netscape Communicator 4.01's small RAM appetite compared with Navigator 3.01's (*Reviews*, October 1997). Communicator requires 3MB less RAM than its predecessor only when virtual memory is enabled. With your Mac at full speed and virtual memory off, it requires a scant 1MB less than Navigator 3.0—and that's without Conference and the other Communicator add-ons.

As for 4.01's stability, my system froze up the first time I used Communicator. Add a goofy, cartoonish new interface that looks like Microsoft Internet Explorer meets Hanna-Barbera; the inability to set background color in mail windows (this works only in the browser for some reason); and the absence of 3.01 button features such as Reply To All, and I'd say Communicator 4.01 isn't worth the bandwidth its hype is uploaded on.

MATTHEW RUBEN
Philadelphia, Pennsylvania

You'll save memory without a performance hit if you turn on virtual memory and set it to provide only 1MB of memory more than your physical RAM. To set the background color of e-mail messages, choose Colors and Background Image from the Format menu, select Use Custom Colors, and click on Background.—Paul Devine

Keep 'Em Separated

I SEE APPLE AS THE MAKER OF A great operating system and well-built (but not cutting-edge) computers. Often surpassed by the clone makers, Apple now uses the leverage of its OS availability to protect its hardware sales. I think Apple should divide its hardware and software operations into two separate holdings. Current stockholders could be given a choice of how they wish to have their holdings redefined. The wisdom of this is that neither the hardware nor the software operation would be forced to support the other, encouraging each to maximize profitability. The only problem is that most Apple stockholders would probably opt for the Mac OS and software and dump the hardware. But what if the hardware division started looking at another OS? Now that's a performance incentive for each side!

RORY IVERS
La Jolla, California

The Mac Lurches Forward

IRONICALLY, GIVEN ITS PUTATIVE technical prowess, the United States has a long history of standardizing on mediocre technology (QWERTY keyboards, VHS, 525-line television, and so on). Therefore, I am not surprised that the Macintosh has largely lost the desktop battle with Windows. The blame for much of this must be placed with Apple, which has been arrogantly assuming that superior technology will inevitably tri-

continues

JEFF NEUMANN

CORRECTIONS

- *Deneba Software's Canvas 5.0.2 received a Star Rating of* ★★★/5.9 (Table of Contents, *November 1997*).
- *Scott Hazen Mueller's name was spelled incorrectly in "Stopping Junk E-Mail,"* News, *November 1997.*
- *RDG Tools' DitherBox 1.0 is able to "paint" with hybrid colors and received a Star Rating of* ★★★★/8.9 (Reviews, *November 1997*).

umph over the savvy marketing of the mediocre. In fact, the opposite has usually been the case.

The additional irony is that, as its market share drops, the Mac platform is evolving at an astonishing pace. I'm writing this with a two-month-old PowerBook 3400/200c, which is the finest computer of any kind that I have owned. I bought my wife a PowerCenter Pro last month, and it as well is fast, stable, and a joy to use. Forget the media circus, the Mac OS has never been as good as it is now. If you wish to get a lot of work done efficiently and with minimal headache—indeed, with elegance—consider this gem of a computing system.

LARRY CROCKETT
Eagan, Minnesota

Just Be

I THINK *MACWORLD* SHOULD DRAmatically expand its coverage of the BeOS for Power Macintosh. I'm using Be to compose this letter, as well as to Web surf and Telnet to my campus e-mail system. The Internet functionality in Be is beautiful, seamless, and best of all, as fast as warp speed. It makes Mac OS 8 seem pokey and unresponsive in comparison. The BeOS is what the Mac OS and Windows both dream about being. I hope Apple won't regret not licensing Be when it had the chance. I think the BeOS is a very viable alternative to Apple's OS for those of us who are committed to the PowerPC chip. I hope that with the release of BeOS 1.0 there will be a version of Microsoft Office to go with it. That will be all I need to abandon the Mac OS and use Be for everything.

MARK KAIMAN
Syracuse, New York

Apple Turns Back the Clock

IN THE MACINTOSH WORLD, WE'VE all been acting superior over the ability of *our* computers to properly handle dates after the turn of the millennium. In fact, Apple has simply pushed the problem 20 years into the future. Inputting a year in the near twenty-first century with just two digits (for example, 05) returns the correct four-digit year (2005). But try the same technique with a year after 2019, and you'll find your Mac suddenly warping itself back to the Age of the Flappers.

JOHN DICKISON
Tokyo, Japan

To License or Not to License . . .

NO ONE IS MORE EXCITED OVER the presence of Steve Jobs than I, but for different reasons. Since the licensing of clones, the share of the Mac OS in the computer world has stayed the same, while Apple's share of the market has fallen proportionally to the clone makers' gains. Now Jobs is trying to slow this decline by making it tougher and more costly to license the Mac OS. If the clone makers threaten to go PC or to Be, let them. If they want the best, they should pay up. The Macintosh is the Mercedes-Benz of computers. Sure, 94 percent of the American public drives Chevys and Fords, but do they really compare to the German models?

BOB MARKETOS
Petaluma, California

Smile, Uncle Bob!

MACWORLD'S REVIEWS OF SCANners, color printers, and digital cameras are seriously flawed by the type of image used for evaluation. Take the "Midrange Digital Cameras" review in the October 1997 issue. The glacier picture provides no information about the image quality of more-mundane stuff—like Mom, Dad, and the kids. Your readers want to know how these devices render skin tones. How about taking pictures of people when testing digital cameras? I think we'd all learn a lot more if these subjects were used.

JEFF ZIEGLER
Salem, Missouri

Don't Hack the Hackers

I LOVED THE ARTICLE BY DAVID Pogue about "warez" and AOL (*The Desktop Critic*, October 1997). I'm 13, and I use AOL. I've been a small and insignificant member of the warez community. I've seen the meeting places and talked to people who are high up in the community. I'm not fanatic about it. I can't give you every commercial program ever made, nor can I tell you where to get them all.

I agree with many of the points made in Mr. Pogue's article, but I have one disagreement. You called the warez people "hackers." I don't think they are. The definition of *hacker* is a very disputed thing. Hackers were originally smart Unix programmers, people who could program, or "hack," their way out of a tight situation. Then the term morphed and began to mean "computer intruder." *Hacker* does *not* mean "software pirate." Unix hackers are generally stereotyped as computer nerds who wear half-inch glasses. Computer-intrusion hackers are stereotyped as computer nerds who wear half-inch glasses and are bent on trying to start World War III from a pay phone. Software pirates are stereotyped like mad. We're all made out to be half-intelligent people who tYpE LiKe tHiS.

In my exploration of the warez community, I've found many intelligent people. I'll put the emphasis on *intelligent*. I've met people who, as well as pirating, write useful utilities and hang out in the metaphysics chat rooms. And they all know how to use the shift key properly.

ROBIN GOODFELLOW
Sova, Fiji

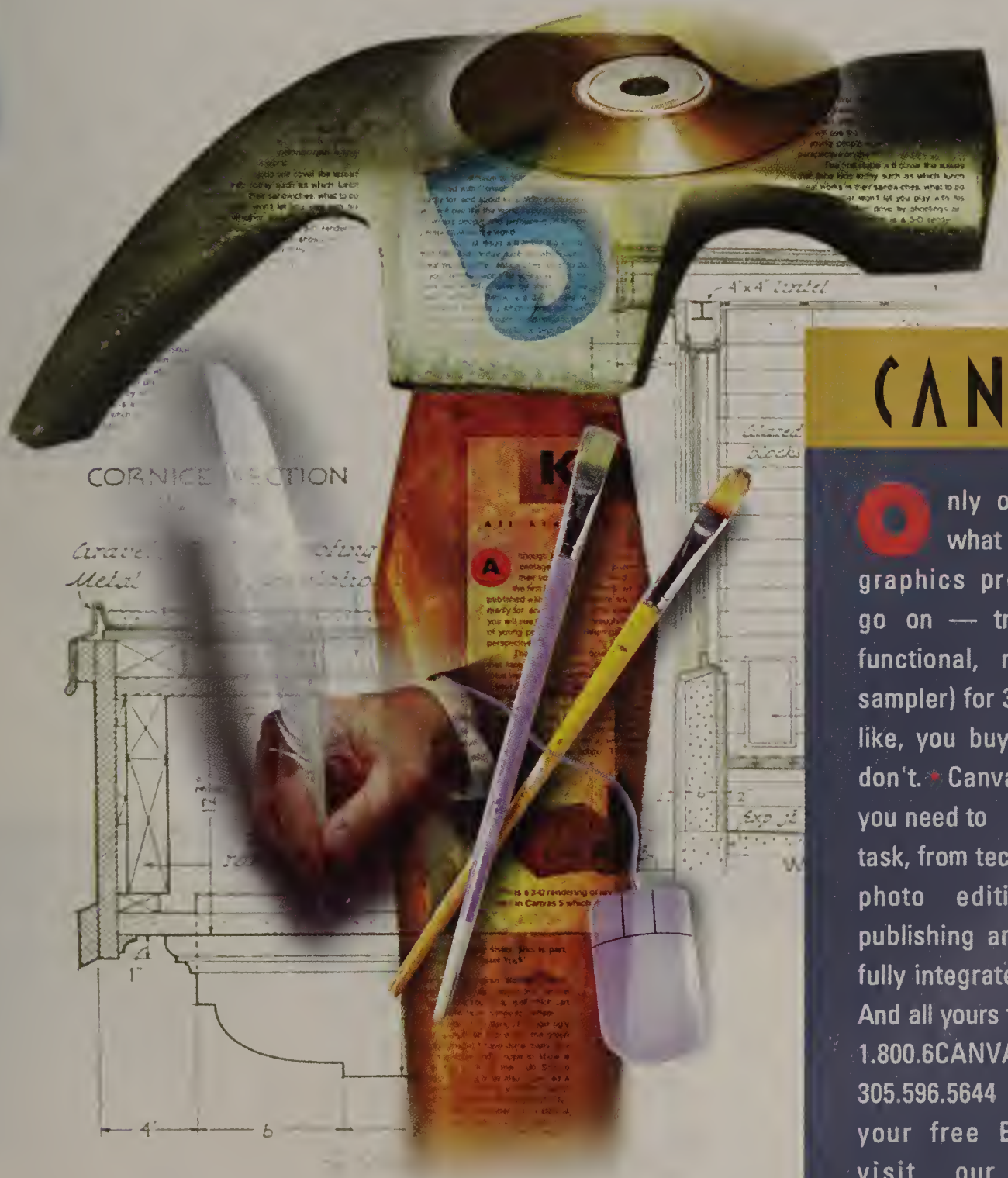
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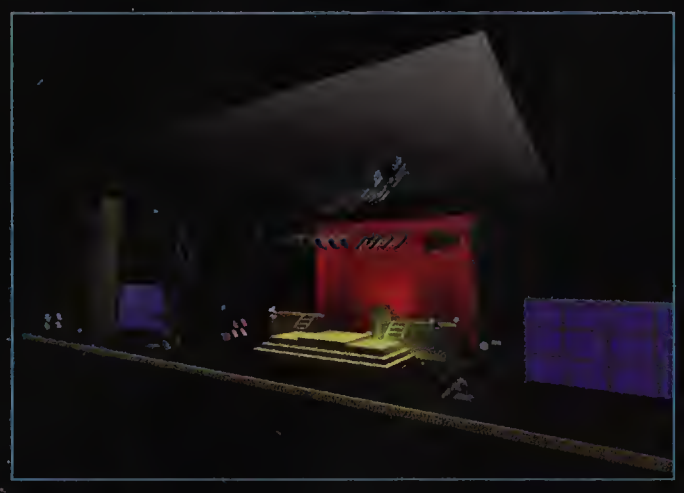
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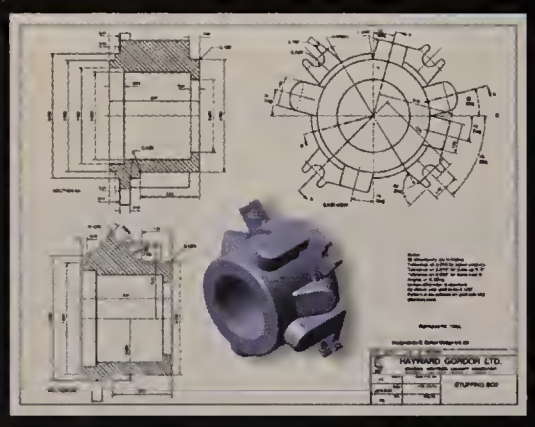
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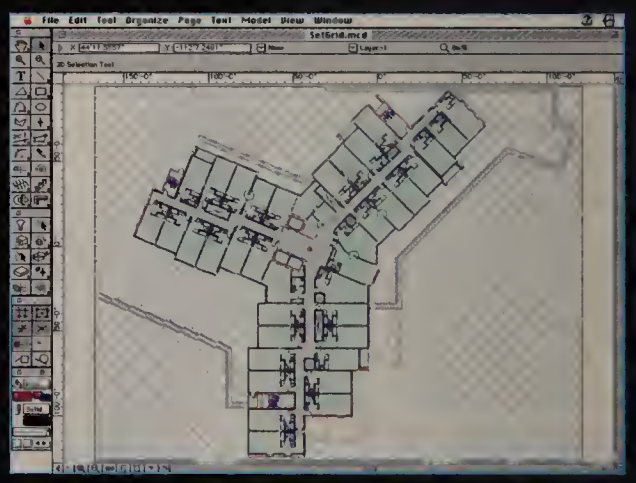
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The Vision Thing

by Andrew Gore

Games without Frontiers

HOW MESA IS PROVING THAT THE MAC REALLY IS A GREAT GAME MACHINE

IT'S A NATURAL TENDENCY to generalize. Generalizations let us make fast decisions when a careful evaluation of the facts isn't practical. Of course, generalizations are usually based on previous experience that may not apply in every circumstance. Take, for example, the prevailing generalization that the Mac is not a strong platform for games. In part, this is true—the installed base of the Mac is smaller than that of Windows 95, so more Windows game titles are sold than Mac titles. However, it doesn't necessarily follow that Mac users are not interested in games or are unwilling to pay for top-quality titles. As it turns out, a new industry organization is working hard to prove another generalization: The Mac is a great game machine.

View from the MESA

With Apple's release of the Power Macintosh G3, the PowerPC architecture is again proving its superiority over Intel's, not just in speed but also in affordability (see the cover story for all the details). These fast and inexpensive systems will be a boon for content creation. But that's not what has me excited. Making the games scream is what has me champing at the bit for a G3-powered Mac. The only problem is that there seemed to be few hot new titles capable of taking advantage of the processing power of these new machines.

Then I heard about MESA, the Macintosh Entertainment Software Alliance. MESA is a bunch of game developers who were getting tired of the "Macintosh is not a good platform for games" generalization and decided to do something about it. MESA members believed that factors such as poor stocking, uninformed salespeople, and restrictive mail-order practices—not a weakness in the Macintosh itself—were holding back a potentially lucrative market for Mac entertainment titles.

The Game's Afoot

Key among MESA's initiatives is the effort to improve the economics of selling Mac games through mail-order catalogs. Prior to this effort, game developers could actually lose money selling via mail order. Why? Because they had to pay steep fees to place their products in mail-order catalogs. Because games are low-priced, and therefore low-profit, the cost of an ad in a catalog meant that only runaway best-sellers could make money. A game that sold only moderately well could lose money sold via mail order, which, of course, discouraged developers.

Then MESA got involved and convinced three of the four major Mac mail-order houses to stock games based on what customers want instead of what developers are willing to advertise, and games sales are now going through the roof. The only mail-order holdout is MacWarehouse, which, according to MESA president Peter Tamte, believes games are not important to its catalog.



JOHN RITTER

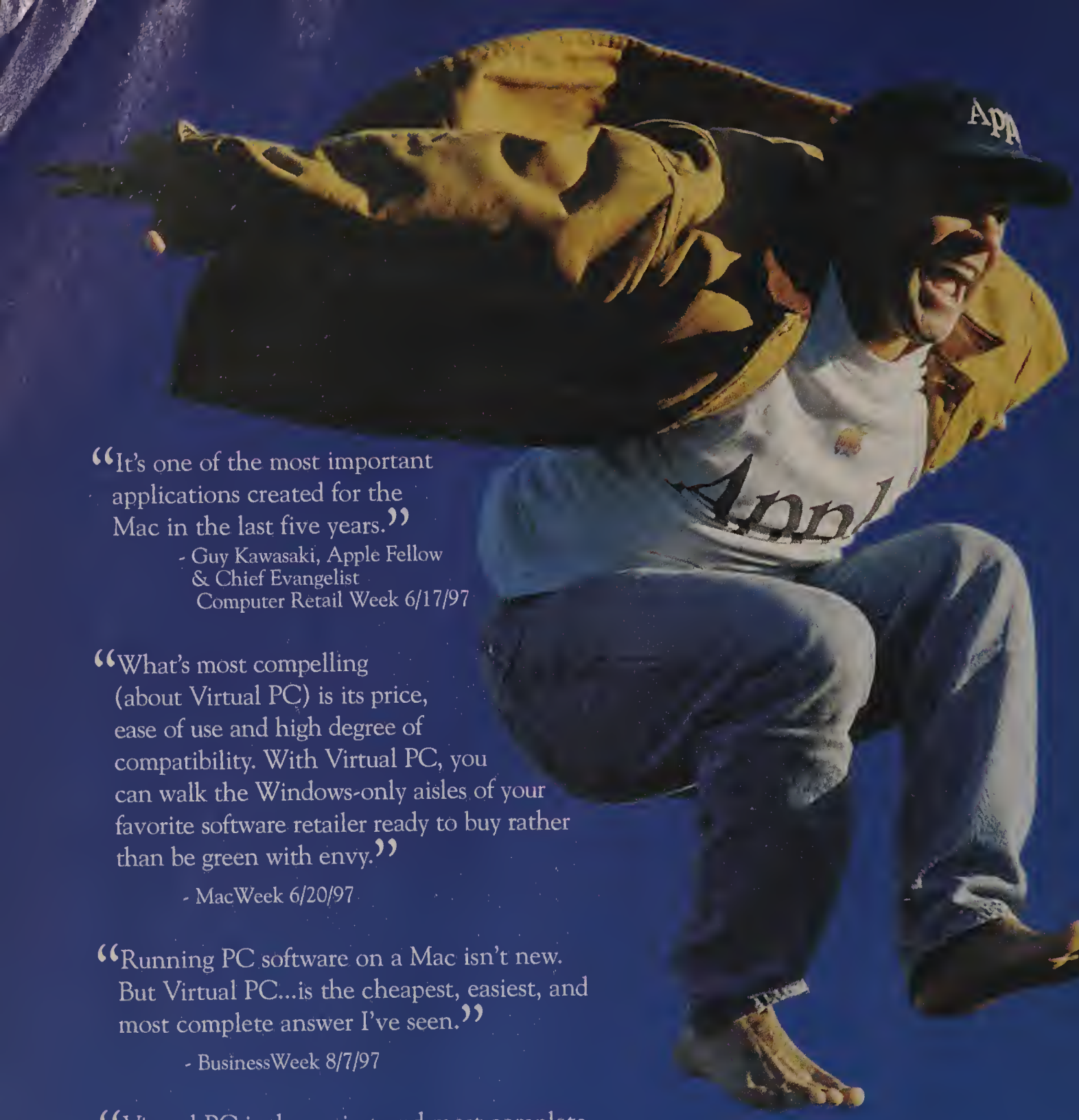
MESA's second initiative was to heighten the profile of Macintosh games in retail stores, which still sell 70 percent of all Mac games. In a copromotion with Apple Computer, key retailers have agreed to place the top ten Macintosh games on endcaps and other premium shelves. In addition to making Mac games more visible in these stores, this initiative also gives Macintosh game buyers a freebie: If they buy two of the top ten games, they get a third game (not from the top-ten list, of course) for free.

And those top ten games? Myth, Diablo, Starfleet Academy, F/A-18 Hornet 3, Quake, Duke Nukem 3D, Shadow Warrior (sequel to Duke), Jack Nicholas 4, Civilization 2 (best-selling strategy game ever), and Master of Orion. Just looking at this list is enough to make a Macintosh gamer like me salivate. I can see I'll have many sleepless nights as my new G3 Macintosh and I struggle to meet these sinister challenges!

This could be the best holiday season ever for Macintosh gaming, thanks to the efforts of MESA and a handful of dedicated game developers (for more evidence, see "Great Games," *Macworld*'s Game Hall of Fame, in this issue). But if we don't support these products, the Mac may lose developers as well as users. Around 65 percent of Mac users play games, and while it may not be the number one consideration when buying into the platform, it is a major one. So, if the Mac community doesn't continue to emphasize the Mac's strengths as a game machine, it could lose more users to Wintel, just because they want to play a few good games.

Just in case you doubt the potential strength of the Mac as a game machine: Duke Nukem, Quake, and Civilization 2 all paid for their entire development on the first day of sales. **m**

Stop playing games; tell me what you really think by sending your comments to visionthing@macworld.com.



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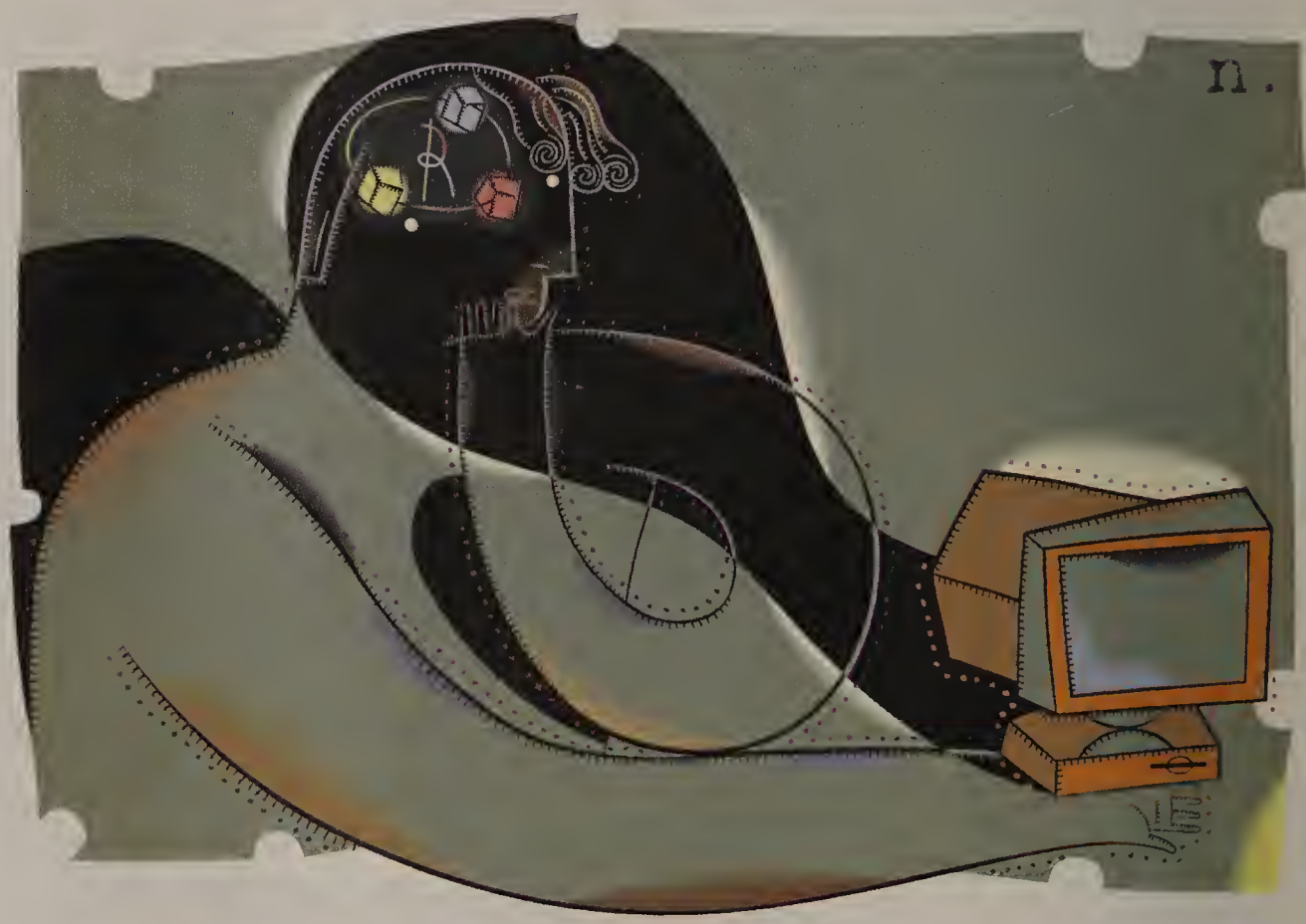
News

systems

Apple Ships Rhapsody to Developers

BUT MAC OS REMAINS PRIMARY FOCUS

by Stephen Beale



JEFF NEUMANN

Apple's Rhapsody operating system was back in the limelight in October, when the company shipped the first release of the next-generation OS and a host of vendors announced Rhapsody software. Still, Apple has made it clear that the Mac OS will remain its primary focus for the foreseeable future.

"The Mac OS is and continues to be the mainstream operating system," says Rhapsody product-line manager Ricardo Gonzalez.

Apple announced Rhapsody in January 1997, shortly after its acquisition of Next (see "What's Next for the Mac OS?" *News*, March 1997). The OS would have two components: a Blue Box, for running Mac OS applications, and a Yellow Box, based on Next's OpenStep software, that would offer such modern OS features as protected memory and preemptive multitasking. Although Apple also announced a rollout plan for future versions of the Mac OS, it appeared that Rhapsody was getting most of the company's attention.

Strategic Shift Months later, Gil Amelio resigned as CEO, Steve Jobs took the reins as de facto chief executive, and Apple shipped Mac OS 8—which sold 2 million copies by mid-October.

Speaking at the August Macworld Expo in Boston, Jobs signaled that he had shifted emphasis from Rhapsody to the Mac OS. During his keynote, he said that Apple would beef up its investment in the Mac OS. He also told *Newsweek* magazine that "a lot of Rhapsody will be in the Mac OS, rather than the other way around."

Jobs now says Rhapsody will be Apple's equivalent of Microsoft's Windows NT, first supporting servers and other high-end software that can take full advantage of modern OS features. *MacWeek* has reported that Apple's forthcoming Mac OS–based network computer will be tied to Rhapsody servers.

Rhapsodized Developer The initial release of Rhap-

sody is not intended for prime time. Instead, it is aimed at vendors who may want to develop Rhapsody-based software or hardware. It does not include the Blue Box for Mac OS compatibility and lacks support for Point-to-Point Protocol, which allows dial-up connection to the Internet.

Still, a host of vendors have announced Rhapsody-based software. Many of the developers already have experience with OpenStep.

Among the new packages are Create, a $249 design and layout tool from Stone Design (505/345-4800, www.stone.com); PasteUp, a $695 page-layout program from Anderson Financial Systems (215/653-0911, www.netaxs.com/~afs); and Glyphix, a drawing and charting program from M. Onyschuk and Associates (416/598-1321, www.oaai.com).

OpenBase International (603/547-8404, www.openbase.com) announced a Rhapsody version of its OpenBase SQL database manager, and Snap Innovation, a German developer, says that it has ported its Prime Base database software to Rhapsody. Dantz Development (510/253-3000, www.dantz.com) announced Rhapsody client software for use with Retrospect, its Macintosh-based backup utility.

Premier on the Way Next on Apple's Rhapsody agenda is Premier, which is scheduled for release in early 1998. Premier will include the first implementation of the Mac OS–compatible Blue Box, as well as the QuickTime Media Layer.

Apple also says it will include a version of its AppleScript scripting software in all future releases of the Yellow Box, including Yellow Box versions slated for PCs.

Additional reporting by *MacWeek* staff.

industry

Apple Announces $161 Million Loss

JOBS REMAINS COY ON CEO PLANS

by Stephen Beale

Steve Jobs's famed reality-distortion field was on full display at the recent Macromedia User Conference, where he received a standing ovation from multimedia developers after hinting that he might be willing to drop the "interim" from his job title and become Apple's long-term CEO. Unfortunately for Apple, even Jobs could not hold back a cold splash of financial reality as the company announced that it had lost $161 million in the fourth fiscal quarter, which ended September 26.

Most of the loss was due to a pair of onetime charges: $75 million for the acquisition of Power Computing's Mac business and $62 million for future restructuring charges. That left an operating loss of $24 million; analysts polled by First Call had predicted a $17.8 million loss.

Disturbing Trends Behind the numbers were some disturbing trends. Sales continued to decline, as Apple sold 625,000 Macintoshes, compared with 932,000 in the same quarter a year ago. Apple Chief Financial Officer Fred Anderson blamed this situation in part on a shortage of the fastest PowerPC chips, leading to a $200 million backlog of orders for Apple's most profitable high-end Macintoshes.

Education revenues went flat at a time when PC makers were increasing their K–12 sales, reducing Apple's share in one of its most important markets. Sales in Japan, another key Apple market, plummeted 50 percent from the same quarter a year ago.

Overall revenue was $1.6 billion, down 30 percent from $2.32 billion in the fourth quarter of 1996. For the year, Apple lost about $1 billion on sales of $7.1 billion, compared with 1996 losses of $816 million on sales of $9.8 billion.

Apple suffered the losses despite strong sales of Mac OS 8. Also on the plus side, Anderson said that quarterly operating expenses were $353 million, down $55 million from the previous quarter. Apple continues to have strong reserves, with about

continues on page 30

Apple's New Channel Program

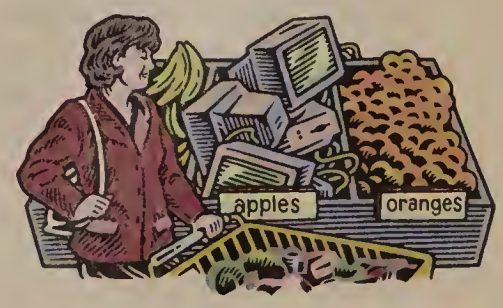
BY LEANDER KAHNEY, MACWEEK

HOPING TO SPUR GROWTH WHILE CUTTING OPERATING EXPENSES, Apple recently announced that it is shaking up its relationship with resellers and its methods of supplying them.

Apple acknowledges that sales have suffered from a lack of Mac advocacy among resellers, especially computer superstores, and from problems in getting products to market. Mitch Mandich, senior vice president of Apple Americas, says that Apple will boost Mac advocacy by increasing the number of dealers buying directly from the company.

Going Small To do so, in December Apple will reduce its requirement for direct purchases from $20 million in direct purchases annually to $2 million. The lower requirement will attract smaller dealers, who Mandich says are generally more committed to the Macintosh than superstores.

He also says that Apple will remove restrictions on the type of products dealers can sell. Previously, the retail channel was generally restricted to selling consumer machines, while value-added resellers were restricted to high-end products. Mandich says resellers will have access to the full range of Apple's goods, with the exception of education-specific products.



The company also hopes to see significant savings in inventory management by changing its return and price-protection policies, Mandich says. Apple reduced the amount of unsold goods resellers can return, from 10 percent to 5 percent, and said it will guarantee product prices for 30 days. Previously, Apple protected only products in inventory or transit.

The move is designed to encourage the channel to turn products over faster by placing greater responsibility for managing inventory in dealers' hands, says Michael France, a member of Apple's new Apple Dealer Association board and a senior partner at MacCenter, a reseller based in Fort Lauderdale, Florida.

BRYAN WIGGINS

Special REPORT

Coming Soon to a Service Bureau Near You

DIGITAL PRESSES AND LARGE-FORMAT SYSTEMS TRANSFORM IMAGING SERVICES

A few years ago, your service bureau probably earned most of its revenue by offering imagesetter film output and other prepress services. Today, many of these firms are transforming themselves into digital-printing centers with high-speed copiers, digital presses, and large-format output systems. In this special report, *Macworld* looks at emerging technologies that are well on their way to taking the *pre* out of prepress.

Digital Presses Get Personal

by Stephen Beale

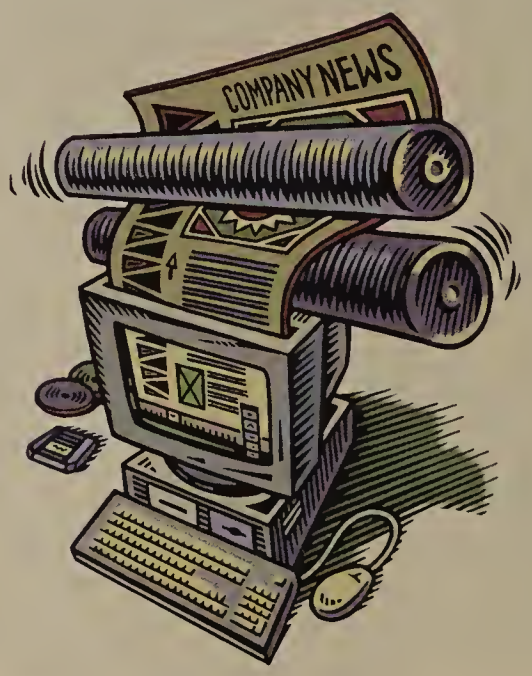
Digital presses are nothing new. The first models, Indigo's E-Print 1000 and Xeikon's DCP-1, were introduced in 1993 and soon began proliferating in service bureaus seeking new lines of business. However, graphics professionals have been slow to take advantage of the presses' unique functions, such as the ability to produce personalized documents with variable text and graphics. A major problem has been the lack of easy-to-use personalization software, but things are changing with recent announcements of variable-data programs that work with QuarkXPress and other graphics software.

Digital presses use a variety of methods to produce high-quality color output at speeds approaching those of conventional offset equipment. Most digital presses are based on the same technology found in color copiers; some high-speed copiers, such as Canon's 30-pages-per-minute CLC 1000, could be considered digital presses. Because they produce output directly from digital data, the presses can vary the text and graphics on each page in a print job—if you have the appropriate software.

Mail Merge Plus Personalization software could be thought of as mail merge on steroids. A mail-merge program lets you insert variable data—such as a name and address—into direct-marketing pieces and other documents. A personalization program lets you place variable photos and illustrations as well as text to produce customized graphics-laden documents for specific recipients.

The benefits should be easy to see. In an early demonstration of personalization at the 1995 Seybold San Francisco conference, Apple representatives used QuarkXPress, AppleScript, and an Indigo E-Print 1000 to produce customized flyers for a fictional Macintosh promotion aimed at college women and male corporate executives. The former featured a photo of a young woman in an outdoor setting, while the latter showed a middle-aged man sitting at a desk. Each flyer also included the names of Macintosh dealers in the recipient's area.

Currently available personalization programs vary widely in price and capability, but the basic approach they use is the same. First you create a page layout, generally using QuarkXPress. You place the constant text and graphic elements—those that remain the same on each page—and then add empty text and picture boxes for variable data, linking these to fields in a database. Some programs offer sophisticated conditional-graphics functions, such as changing the width of a rule based on information in a database field.



Once you've completed the layout, you send the QuarkXPress file and the database to your service bureau, which then prints the finished, customized documents.

Focus Gold Vision's Edge (904/386-4573, www.xtender.com), a QuarkXTensions developer, announced its Focus Gold personalization program at the 1997 Seybold San Francisco. Originally created for *Reader's Digest*, the $2,000 QuarkXTension works with Claris FileMaker Pro to produce personalized documents. A visual interface lets you set up formulas and conditions for varying text, graphics, and rule widths. The program supports any PostScript-compatible output device, but the company says it is also working with digital-press vendors to create custom performance-enhanced versions for their equipment.

In March, Vision's Edge plans to release a simplified version called Focus Silver; the price will likely be between $500 and $600.

PrintShop Mail Splash Technology (408/328-6300, www.splash.com), a vendor of Mac-based print servers for Xerox color copiers, is offering PrintShop Mail, a personalization program that it sells with its Splash systems. Oldsmobile is using the software, along with Apple's WebObjects, to provide potential buyers of its Intrigue model with information customized to their purchase preferences. Customers at Oldsmobile dealers enter color preferences and other information into a database, eventually producing a custom Web page and a specifications booklet.

ILLUSTRATIONS BY BRYAN WIGGINS

PrintShop Mail, developed by Atlas Software (www.atlassoftware.nl), of the Netherlands, works with PostScript files created in a word processor or page-layout program. Atlas offers a stand-alone version for Xerox and Canon copiers; you pay $1,395 for up to 200,000 prints or $3,995 for unlimited prints. A demo version is available on the company's Web site.

Fiery FreeForm Electronics for Imaging (650/286-8600, www.efi.com) has announced a personalization program called Fiery FreeForm Variable Data Printing that works in conjunction with its Fiery controller for digital color copiers. The software can customize multiple-page documents and lets you add transparent or opaque variable elements.

These are just a few of the personalization programs now available, and more are likely to follow. All require extensive interaction with your service bureau. In some cases, you may not have to purchase the software; instead, you can set up the database and QuarkXPress layout and let your service bureau handle the rest. Always be sure to discuss your project requirements with your service bureau before investing in any personalization software.

Design Impact Personalization programs raise interesting issues for designers. When you design marketing materials with static text and graphics, it's easy to see how the elements work together. With personalization, designers will have to create pages that look good with varying combinations of photos and illustrations. But given the obvious advantages of variable-data printing, many designers will no doubt welcome the challenge.

Ink-Jets Make Large Strides

by Andrea Dudrow

Large-format electrostatic printers have long been the workhorses of service bureaus offering poster-size output. Given their fast printing speeds and durable output, service bureaus were willing to overlook their drawbacks, such as the $50,000 to $100,000 price tags. The first large-format ink-jet printers, while much less costly than electrostatic ones, were slow and limited to producing indoor graphics. Today, a new generation of ink-jet printers is quickly advancing on electrostatic territory with faster print speeds, higher resolution, and inks that resist fading in sunlight.

Piezo Prints CalComp (714/821-2000, www.calcomp.com), Raster Graphics (408/232-4000, www.rgi.com), and Xerox ColorgrafX (408/229-3929, www.xerox.com) have each introduced large-format printers based on piezoelectric technology, which uses pressure instead of heat to place ink on the paper. In addition to being faster than older ink-jet printers, these offer resolutions up to 720 dpi; most other large-format ink-jet printers are limited to 300-dpi output. All are priced between $20,000 and $30,000.

One of the first large-format piezoelectric ink-jet printers was the $19,995 PiezoPrint 1000 from Raster Graphics, which the company announced about a year ago. The printer, actually manufactured by Mimaki, handles paper up to 52 inches wide and uses pigment-based inks that resist fading in sunlight.

The printer is bundled with PosterShop PS, a Macintosh-based raster-image processor (RIP) from Onyx Graphics. The RIP acts as an intermediary between the computer and the printer.

Xerox and CalComp More recently, Xerox ColorgrafX introduced the VivagrafX Xpress, a $29,995 device that prints on media up to 36 inches wide. The printer can hold up to three rolls of paper. Output speed ranges from 40 to 160 square feet per hour depending on resolution. The price does not include a RIP; Xerox offers a $6,000 NT-based RIP for the printer, but RIPs are available from other vendors as well.



CalComp's new CrystalJet is available in two versions, a $21,995 model with a maximum paper width of 42 inches and a $29,995 model that handles paper up to 54 inches wide. The printer includes a built-in PostScript interpreter, but CalComp expects most service bureaus will add their own RIPs for faster throughput. One unique feature is an LCD screen that shows video clips on common printer maintenance tasks. Output speed ranges from 72 to 240 square feet per hour depending on resolution.

Extra Ink The latest DisplayMaker printers from ColorSpan (formerly LaserMaster; 612/944-9330, www.colorspan.com) print at 300-dpi resolution but have eight inks instead of four; you can add light and medium cyan and magenta inks to achieve photographic resolutions equivalent to 1,200 dpi, ColorSpan says. The extra ink wells can also be used for switching between traditional dye-based inks and new pigment-based inks for outdoor graphics. The units are available in 42-, 52-, and 60-inch widths for $17,995, $21,995, and $27,995, respectively.

For the Rest of Us For designers who would like to bring large-format printing in-house, Hewlett-Packard (800/752-0900, www.hp.com) has introduced the DesignJet 455CA, a $4,195, 36-inch printer that offers a maximum color resolution of 300 dpi. The price includes a Macintosh-based software RIP and a JetDirect RX external print server for speedy throughput.

Customer Benefits Thanks to these new ink-jet printers, service-bureau customers can expect more choices and faster, better-quality poster-size output.

With their increased resolution and, in some cases, extra colors, these printers could begin competing with high-end Iris Graphics ink-jet printers for fine-arts output. Grey Held, a senior analyst with Lyra Research, says that Hewlett-Packard and Raster Graphics have made big strides in image quality, especially for photographic output. Iris printers are "still the cream of the crop in terms of quality," Held says. But he believes that large-format ink-jet printers will eventually match the quality of Iris printers.

Sneak PEEK

Dreamweaver Brings HTML to Life

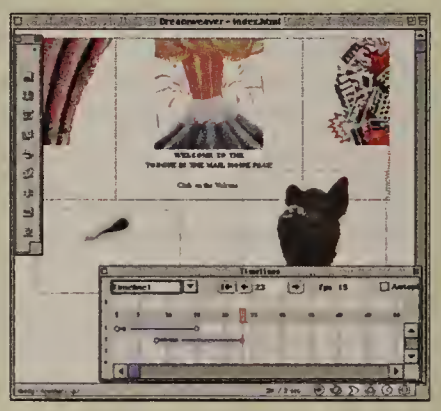
BY JASON SNELL

In the fast-moving world of the Web, today's top HTML editor can be tomorrow's roadkill. The latest contender for the crown is Macromedia's Dreamweaver, a WYSIWYG editor due in December that creates animated, CD-ROM–style Web pages using a new version of HTML called Dynamic HTML.

Like CyberStudio and NetObjects Fusion, Dreamweaver ($299 through February 1998, $499 after) lets you design Web pages by dragging items on a page. But while those programs use complex HTML tables, Dreamweaver uses a new HTML feature, absolute positioning, to place objects with pixel-level accuracy. It also supports cascading style sheets, which lets you apply styles to a Web page or an entire site via a floating Style palette.

There's even CD-ROM–style interactivity: Via the Timeline Inspector, you can make text and graphics slide across a page or appear and disappear when you click on a link.

Hands off the Code Web authors will appreciate Dreamweaver's hands-off approach to HTML code—we found that unlike with most WYSIWYG editors, opening several complicated pages revealed only a few rewritten tags. The tags Dreamweaver changed contained errors, which Dreamweaver corrected. Another plus is Dreamweaver's tight integration with Bare Bones Software's excellent BBEdit text editor, which is bundled with it. A library stores commonly used fragments of HTML code such as headers and footers. When you change an element in the library, Dreamweaver can automatically make that change on every other page in your site.



You can animate objects in Dreamweaver by selecting an item and moving it within the Timeline window.

There are drawbacks to being a Web pioneer, though: Dynamic HTML pages require Internet Explorer and Navigator versions 4.0; older browsers see only a mishmash of text and graphics. In contrast, CyberStudio and Fusion's layout methods are compatible with most Web browsers in use today. Plus, Dreamweaver's interface for creating and editing older, more-common HTML tags such as tables doesn't seem as strong as either CyberStudio's or PageMill's. And much of Dreamweaver's impact has to do with being the first WYSIWYG editor to support Dynamic HTML. But will it be king of the hill in a few months? As is always the case in Web time, that's anyone's guess.

multimedia

Macromedia Unplugged

ANNOUNCES UNIVERSAL MEDIA INITIATIVE AT USER CONFERENCE

by Stephen Beale

Looking to end the proliferation of browser plug-ins, Macromedia (415/252-2000, www.macromedia.com), used its annual conference in October to announce a Universal Media Initiative that will let you view ShockWave and Flash animations—and other forms of dynamic media—without special playback software. Designers can now make animated Web sites accessible to users who don't have the necessary plug-ins.

The company's goal is to adapt its multimedia authoring tools to such Web standards as Java and Dynamic HTML. The latter, supported in the latest versions of Netscape Navigator and Microsoft Internet Explorer, lets you create Web-based animations by using HTML codes.

One early fruit of this initiative is Macromedia's new Dreamweaver Web authoring software (see "Dreamweaver Brings HTML to Life," at left), which supports Dynamic HTML. But Macromedia has also extended its efforts to its other multimedia tools.

Java Playback A forthcoming Java Export Xtra for Macromedia Director 6.0 and 6.0.1 will enable you to convert Director files into Java applets that can be viewed in any Java-compatible browser. Macromedia plans to ship the Xtra in early 1998. Pricing has not yet been determined, but Macromedia will offer the Xtra at no charge to users who purchase or upgrade to Director 6 before the end of 1997.

Macromedia's new Flash Player Java edition lets you generate Java applets that contain Flash vector animations. The software is available now as a public beta from Macromedia's Web site; the final version will ship for free by year's end.

Aftershock Macromedia also announced Aftershock, a technology that allows Web designers to set up playback hierarchies based on the capabilities of particular browsers. If you create a Flash animation, you can set it up to play first through the Shockwave Flash plug-in. If the user hasn't downloaded the plug-in, the animation will play as a Java applet. If the user doesn't have a Java-capable browser, the animation will play as an animated or still GIF.



The Flash Aftershock utility is now available on Macromedia's Web site. Macromedia plans to release a Director Aftershock utility by the end of the year.

The company isn't giving up on plug-ins, which still offer the fastest playback of Shockwave and Flash media. In addition, the Java applets are missing some features supported in the plug-ins, such as the ability to play stereo audio.

Macromedia also an-

BRYAN WIGGINS

nounced the FreeHand Animation PowerPack, a $39 collection of Xtras that allow direct export of Flash animations from FreeHand. One Xtra transforms FreeHand blends into Flash-animated vector morphs.

Sneak Previews One conference session offered a look at features likely—but not guaranteed—to appear in future Macromedia products, including FreeHand 8.

FreeHand users can look forward to an Image Hose, similar to the one in Fractal Painter; a customization option that lets you define your own keyboard shortcuts and tool bars; a tool that lets you reshape paths without dragging Bézier control points; and a feature that lets you rotate objects as you mirror them.

Company representatives also previewed transparency capabilities for Flash animations, quiz-building tools for Authorware Professional, and the PowerPoint Import Xtra for Macromedia Director.

graphics

New Order from Xaos

GRAPHICS SOFTWARE DEVELOPER TO ENTER CONSUMER MARKET

by Rebecca Gulick, MacWeek

Xaos Tools (415/477-9300, www.xaostools.com) has unveiled a new graphics engine that unifies disparate graphics types. The engine is propelling Xaos in a new direction as well; the company will enter the consumer photo-editing market with a new product later this year.

"We're basically back as a company with new technology," says Xaos president Bob Batty.

Xaos's new "imaging substrate" will serve as the power behind the company's product line. Under construction for more than three years, the engine and a new scripting language will unify raster and vector technology, 2-D and 3-D graphics, and still and moving images, Batty says.

Flashy Images Flash Box will be Xaos's first product based on the new technology. The $99 image-editing tool will make its Mac debut in January.

The stand-alone application will feature a drag-and-drop interface. Each tool will have its own semitransparent palette of brushes, and all components will reside in animated slide-out shelves.

Flash Box will feature seven thematic Flash Xubes, modules that contain tools and other components. A set of retouching tools will remove red-eye and scratches, adjust blur and sharpen levels, and correct brightness and color saturation. Another set will create morphing effects.

Users will be able to download 12 additional sets of tools and content—one per month for a year—at no extra cost. However, Flash Box will not support Adobe Photoshop plug-ins.

For the Pros While Flash Box is aimed at consumers, Xaos says it will continue to focus on professional graphics plug-ins. Four special-effects products are slated for release in 1998, including Phenomenon, a tool for creating climatic effects for still and moving images. It will support a variety of 2-D, 3-D, and video packages, Xaos says. The company also plans to upgrade its existing $199 plug-ins—Paint Alchemy, Terrazzo and TypeCaster—to the new engine.

systems

Omega Touts Own Mac OS

MYSTERY SURROUNDS GERMAN DEVELOPER OF MAC-COMPATIBLE OS

by Matthew Rothenberg, MacWeek

The air of mystery surrounding upstart German developer Omega (www.omega.de) continues to deepen as international Macintosh enthusiasts ponder the company's claim that it has created a Macintosh-compatible OS from scratch.

Omega, based in Stollberg, Germany, has posted information on its Web site about COS, a new operating system that the company says will run in 4MB of RAM on 680X0- and PowerPC-based Macs equipped with a floating-point unit.

Omega says the $99 software will include its own microkernel and offer four times the performance of Mac OS 8. It will run all Mac OS 7.6– and Mac OS 8–compliant software and include a complete 680x0 emulator, Omega says.

"The first version will

continues



ARNOLD TIOSEJO

New Projector Is Bright and Light

IN FOCUS LP420 PUMPS 400 LUMENS

In Focus (503/685-8888, www.infocus.com) is advancing the multimedia-projector revolution with the introduction of the LP420, which offers a bright picture in a case that's light enough to take on the road. The projector pumps 400 lumens from a seven-pound case and has a maximum resolution of 800 by 600 pixels. It is In Focus's first projector to use Texas Instruments' digital light processing (DLP) technology (see "Mirror, Mirror on the Wall," *News*, March 1996). Other DLP projectors have similar designs, often requiring a larger case because Texas Instruments supplies all the components. With the LP420, Texas Instruments supplies the DLP chip and driveboard but In Focus does the rest. In Focus has also added a white panel to the projector's color wheel, which the company says will increase overall brightness. The LP420 lists for $5,999 and connects directly to your Mac.—ANDREA DUDROW

Sneak PEEK

Bryce 3D Moves Mountains

BY CATHY ABES

Curiously renamed Bryce 3D, the long-anticipated upgrade of the 3-D landscape generator from MetaCreations (805/566-6200, www.metacreations.com), finally provides what its two predecessors lacked: movement. Anything in Bryce 3D can be animated and keyframed; beyond objects and their paths, you can also keyframe textures and effects. Objects can be linked so they move together, and you can have a camera or light link to an object or track it, just by clicking on the Link or Track button and dragging between the two elements.

Simulating Nature It's easy to create animated terrains that evolve over time and mimic nature; Bryce 3D allows you to build up mountains and oceans and just as easily erode them into flat plains or deep valleys; for example, I was able to transform a mountain into a volcano by using a brush to erode its center.

You can also simulate such natural phenomena as sun, moon, clouds, stars, and comets. For example, you can add surface detail and rings to the moon, make the moon and stars become visible as the sky darkens, and enlarge the sun or moon as it approaches the horizon.

After you've made your animation, you can enter Bryce 3D's Advanced Motion Lab to alter your object's velocity; view your entire timeline; or cut and paste, remove, or reposition keyframes. You can also preview your animation.

Fly-through Textures Bryce 3D's second-most-important addition has to be its revamped textures. Whereas Bryce 2 made you settle for surface textures that merely wrapped around objects, Bryce 3D's Hyper-textures are volumetric textures with three-dimensional properties—so, for example, your camera can actually fly through clouds. What's more, any texture imported from Bryce 2 can be easily transformed into a Hyper-texture. And instead of Bryce 2's flat planes, the new version features 3-D "infinite slabs" that have depth. You can also transform one material into another, which Bryce accomplishes by progressively adjusting such properties as color, texture, and opacity.



In Bryce 3D's Advanced Motion Lab, you can change an object's velocity and direction by creating and dragging points on the object's motion path.

The ability to quickly and easily animate Bryce scenes and the addition of volumetric textures make this upgrade worth the wait. Due by the end of November, Bryce 3D retails for $299; upgrades are $99.

printers

Laser Printers Speed Along

HP AND XEROX UNVEIL HIGH-SPEED PRINTERS FOR WORKGROUPS

by Macworld Staff

Color may be the rage, but most offices still have use for black-and-white laser output, especially from high-speed network printers. Hewlett-Packard (619/487-4100, www.hp.com), which dominates the workgroup-printer market, has introduced its latest LaserJet series, while Xerox (716/265-5697, xerox.networkprinters.com) is challenging HP with two new printers, one of which blazes along at 32 pages per minute.

Latest LaserJet HP's new LaserJet 4000, which replaces the LaserJet 5, prints at 17 ppm and uses the company's FastRes 1,200 resolution-enhancement technology to increase effective resolution from 600 to 1,200 dpi. It supports Adobe PostScript Level 2 through emulation software that HP acquired from Xionics. An instant-on fuser mechanism reduces startup time to 15 seconds, HP says.

The printer uses HP UltraPrecise toner cartridges, which yield 10,000 pages each. The cartridges feature smaller toner particles—5 to 6 microns—than previous HP cartridges.

HP offers the printer in four configurations: the base LaserJet 4000, which sells for $1,099; the $1,249 LaserJet 4000 T, which includes an extra paper tray; the $1,399 LaserJet 4000 N, which includes your choice of an Ethernet or LocalTalk connection; and the $1,599 LaserJet 4000 TN, which includes the extra tray and networking.

Speed from Xerox Xerox's new DocuPrint N32 and N24 feature 600-dpi resolution, built-in Ethernet interfaces, and an Adobe-licensed PostScript interpreter. The $2,400 N24 prints at 24 ppm; the $2,900 N32 speeds along at 32 ppm. Xerox offers several options for the printers, including a $550 du-plex module that lets you print on two sides, and a $1,970 finishing unit that can staple documents in three different positions.



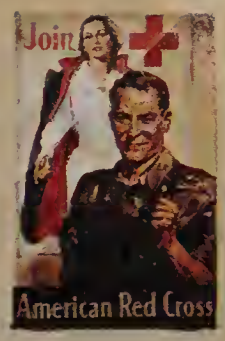
GIBSON

HP has introduced the LaserJet 4000.



1 IN AN EMERGENCY, *split-second decisions mean the difference between life and death. Not surprisingly, then, the Red Cross puts a tremendous amount of importance on training and preparedness.*







A good projector can save a meeting. A great one just might save a life.



NEC MultiSync MT810 and MT1000 LCD Projectors

Hurricanes. War. Floods. While some would run the other way, the Red Cross rushes in. What makes this extraordinary responsiveness possible? Their generous spirit, and an astonishing amount of training.

At NEC Technologies, we salute the Red Cross' incredible commitment to training. For it is our own commitment to training and presentations that led us to develop our new MultiSync® MT810™ and MT1000™ LCD projectors. These compact products offer the highest quality image under all lighting conditions. Simple on-screen menus plus a hand-held remote make them very easy to use. They're backed by NEC's InstaCare℠ 24-hour replacement service. And an introductory video gets you up and running quickly.

All of which makes them the ideal LCD projectors—whether you're training for a disaster, or just trying to keep your next presentation from becoming one. For a free guide to selecting the right projector, call us at 1-800-NEC-INFO. Or visit www.nec.com. Expect more. Experience more.

NEC
NEC Technologies

MultiSync MT LCD Projectors		
	MT810	MT1000
Resolutions Supported	640 x 480, 800 x 600, 1024 x 768 with AccuBlend™ technology	640 x 480, 800 x 600, 1024 x 768, 1280 x 1024 with AccuBlend™ technology
Video Compatibility	NTSC, PAL, SECAM, NTSC 4.43	NTSC, PAL, SECAM, NTSC 4.43
Brightness	550 ANSI Lumens	450 ANSI Lumens
Weight	15.5 lbs	15.9 lbs
Dimensions (W, H, D)	15.6 x 5.7 x 12.6"	15.6 x 5.7 x 12.6"

Both models are compatible with PC, Mac, and workstation computers, feature built-in audio and 2 years of InstaCare 24 hour replacement service.

2 FOR MORE THAN A CENTURY, *the Red Cross has been quick to lend a helping hand. In addition to disaster relief, they present comprehensive health and safety programs such as CPR, HIV/AIDS education and Nurses certification programs. In fact, the Red Cross is a leading provider of such health and safety courses.*



4 IN A DISASTER, *one of the things that helps give you peace of mind is the rigorous training of the Red Cross. In a presentation, one of the things that helps give you peace of mind is the superior performance of the new MultiSync MT LCD projectors (not to mention their reliability and incredible ease of use).*





3 THE RED CROSS IS IN THE BUSINESS *of saving lives. In some ways, perhaps, one could argue that we are as well. You see, the new MultiSync MT Series LCD projectors are so reliable that they're backed by a whole new level of customer service. It's called InstaCare service from NEC Technologies. And in the unlikely event of a problem, it guarantees a replacement projector within 24 hours at our expense.*

Circle 19 on reader service card

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publishing

Scanners on the Move

NEW MODELS FROM MICROTEK, EPSON, UMAX, AND POLAROID

by Macworld Staff

With the recent proliferation of digital cameras, you may think that enthusiasm is waning for their technological cousins, CCD flatbed scanners. But just as digital cameras are getting better and cheaper, so are scanners.

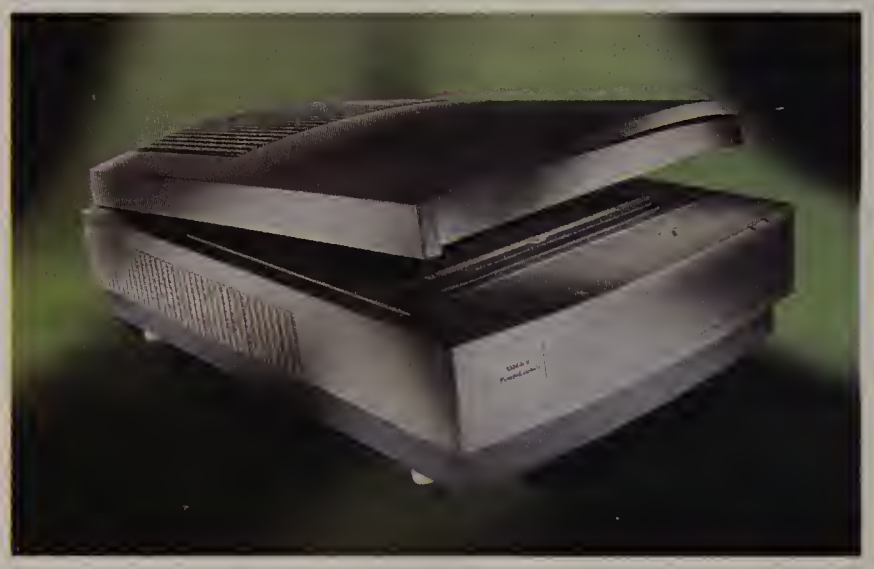
Microtek (310/297-5000, www.microtekusa.com), Epson (310/782-0770, www.epson.com), and Umax (510/651-4000, www.umax.com) have all introduced relatively inexpensive flatbeds aimed at reducing your reliance on your service bureau's drum scanner. Meanwhile, LinoColor (516/434-2000, www.linocolor.com) has announced a trade-in program for its flatbed scanners, and Polaroid (716/256-4436, www.polaroid.com) has introduced a $10,000 scanner that can handle transparencies up to 4 by 5 inches.

Two-Plate Special Microtek's ScanMaker V TwinScan offers 48-bit color depth and a maximum optical resolution of 1,000 by 3,000 dpi. Software interpolation boosts the apparent resolution to 8,000 by 8,000 dpi.

The flatbed scans reflective originals at up to 11 by 14 inches but also features an internal Twin Plate for transparency scanning. The plate, which lets you scan without a glass between the film and the CCD image sensor, includes holders for 35mm slides, filmstrips, and 4-by-5-inch and 8-by-10-inch transparencies. The ScanMaker V was scheduled to ship in mid-December for $2,500 to $3,000.

Two from Epson Epson has two new scanners, a $300 model for SOHO users and a $2,500 flatbed for graphics professionals. The entry-level Perfection 600 features a 600-by-1,200-dpi optical resolution, 30-bit color depth, and a legal-size scanning bed. Bundled software includes Visioneer PaperPort, Adobe PhotoDeluxe, Xerox Textbridge, and Adobe PageMill. An optional transparency adapter costs $200.

The tabloid-size Expression 836XL, with its 800-by-1,600-dpi optical resolution and 36-bit color depth, is targeted at graphic-arts production. The scanner includes an autofocus feature and a pin system for precise alignment of originals. A Text Enhancement Technology feature improves optical-character-recognition accuracy. A transparency adapter costs $500.



Umax's PowerLook III features 1,200-by-2,400-dpi resolution.

Umax Power Umax has introduced the latest in its PowerLook series, the PowerLook III and the PowerLook 3000. Both are aimed at graphics professionals; the PowerLook 3000 in particular is positioned as a low-cost alternative to drum scanners.

The PowerLook III, featuring 1,200-by-2,400-dpi resolution and 42-bit color depth, handles transparencies up to 4 by 5 inches and reflective originals up to 8.5 by 11.7 inches. It sells for $3,995.

The $7,000 PowerLook 3000 offers a maximum resolution of 3,048 by 3,048 dpi and 42-bit color depth. A dual-lens system lets you scan letter-size originals at 1,220 by 3,048 dpi or 3.4-by-11.7-inch originals at the full 3,048 by 3,048 dpi.

Both scanners are bundled with Binuscan's PhotoPerfect Master color-correction software.

LinoColor Trade LinoColor, which sells relabeled Umax scanners with its own image-capture and color-correction software, has announced a trade-in program for its scanner customers. The Precious Gems program offers what LinoColor describes as "substantial credits" toward the purchase of a new LinoColor scanner when you trade in your old one.

Polaroid Slides The $10,000 SprintScan 45 Pro, from Polaroid, handles transparencies up to 4 by 5 inches. It samples images at 36 bits per pixel at 2,000-by-4,000-dpi optical resolution. The scanner is bundled with Binuscan's PhotoPerfect Master software.

"APPLE ANNOUNCES LOSS"

continued from page 23

$1.45 billion in cash and short-term assets on hand.

Anderson again refused to predict when Apple will return to profitability. The current fiscal quarter—traditionally Apple's strongest for sales—could be bumpy, because Power Computing and Motorola are offering steep inventory clearance discounts on their clone systems.

Executive Follies Amid the losses, Apple's executive exodus continued, as the company announced the departure of Dave Manovich, senior vice president of international sales, and James McCluney, senior vice president of worldwide operations. Replacing Manovich on an interim basis is Mitch Mandich, senior vice president for North American sales. Heidi Hedlund, senior director of operations/product management, is the acting chief of worldwide operations.

Meanwhile, Jobs is doing a slow dance around the CEO position; he's currently the interim CEO but has repeatedly stated that he is not interested in taking the role on a long-term basis.

During a Q&A session following his keynote at the Macromedia User Conference, Jobs was asked if he would drop the "interim" from his job title. His response—that he would "think about it" during an upcoming vacation in Hawaii—fueled speculation that Jobs had decided to take the post. But a week later, Apple spokeswoman Katie Cotton warned against reading too much into his comment. "He only said he was going to Hawaii to take a walk on the beach, chill out, and think," she said.

Additional reporting by *MacWeek* staff.

ARNOLD TIOSEJO

Remembering Cary Lu

by Cathy Abes

Cary Lu, one of *Macworld*'s most respected and prolific contributing editors, was diagnosed with inoperable cancer last January. On September 23, 1997, he lost his nearly yearlong battle with the disease, just a few months shy of his 52nd birthday.

Cary was probably best known to *Macworld* readers as the author of the *PowerBook Notes* column, which ran from February 1993 through January 1996. But his contributions to *Macworld*—and the Macintosh community—went far beyond that. He regularly answered readers' questions on *Macworld*'s America Online forum and presided over the PowerBook panel at Macworld expos. An excerpt from his *Apple Macintosh Book* (Microsoft Press, 1984) appeared in our first issue.

Hands-on Knowledge Though PowerBooks were a favorite topic of Cary's, his broad knowledge extended to many other subjects. After the demise of his column, he wrote numerous in-depth articles on a wide range of hardware, including scanners, digital cameras, displays, projectors, storage and communications devices, and printers.

Cary's expertise went much deeper than that of most writers. He thoroughly tested everything he wrote about, made sure he understood exactly how and why it worked, and did his best to ensure that by the time you finished reading his article, you did, too.

Flawed hardware never fazed him. He could resolder defective circuit boards, fix faulty monitors, and rewire errant cables. When a connector or peripheral did not seem to exist, he figured out how to make his own. For example, in his last *PowerBook Notes* column, he showed how to make a cable adapter for Apple's PlainTalk microphone that would enable it to work with then-current PowerBooks.

Cary was equally knowledgeable about that other platform. During the blitzkrieg surrounding the rollout of Windows 95, he was one of the experts asked by news media for his opinion of that "wonderful" new operating system. Cary's characteristically succinct reply was probably the best sound bite of the day: "Windows 95 is about two-thirds of a Mac."

A perfect illustration of his reasoned approach to the battle then raging between Mac and PC advocates was an article titled "Computing's Holy War" (*Seattle Times*, June 18, 1995; www.macworld.com/more/), comparing Windows-based PCs—for the most part, unfavorably—with the Mac. Typically, Cary didn't proselytize; he just stated the facts and built solid arguments around them. The result resonated strongly with Mac users. The Word file he sent me containing the positive e-mail responses he'd received was 71 pages long.

An Ultracritical Eye Never one to be swayed by marketing hype, Cary was renowned for asking vendors the tough questions about their products' capabilities and worth. As they struggled to satisfy his concerns, he would eventually get them to admit that perhaps they still had a few holes to plug.



DAN ESCOBAR

> Typically, Cary didn't proselytize; he just stated the facts and built solid arguments around them. The result resonated strongly with Mac users.

But Cary's long stint as a technology writer and editor—first with *High Technology*, then *Inc.* and *Inc. Technology* magazines, and later *Macworld* and *PC World*—was only one of his many careers. Armed with physics and biology degrees, he began as a scientist whose research in visual perception and technology at Bell Laboratories led him into television and filmmaking for educational programs like *Infinity Factory*, *Sesame Street*, and *Nova*. His many other areas of expertise included art, photography, Chinese cooking, classical music, audio equipment, and children's education—the latter at least partly inspired by his and his wife Ellen's determination to provide the best possible learning environment for their own children, ten-year-old Meredith and seven-year-old Nathaniel.

Unlike many technology writers, Cary did not worship technology; to him, computers were merely a tool, not an end in themselves. He maintained that books would always be the best archival medium because, long after any given computer operating system had been abandoned, they would still be readable by anyone. And while everyone around him was embracing the Internet with its vast storehouses of information, Cary stubbornly maintained his position that little of importance was to be found there; he had only recently admitted that perhaps it was beginning to become somewhat useful.

Professional Demeanor A consummate professional who treated everyone—regardless of their status—with courtesy and respect, Cary never shirked his responsibilities and always came through when we needed him. Just before going to the hospital for the last time, he called in final changes to his review of the PowerBook 2400c for our November 1997 issue because he knew I was waiting for them.

But as impressive as Cary's intellect and achievements were, they alone could not have evoked such an outpouring of emotion from so many people. A Web site (www.tidbits.com/carylu/) containing reminiscences from a wide range of friends, colleagues, and those who knew him only through his writings shows what a profound influence he had on those whose lives he touched.

Many of those same people shared their feelings at a memorial gathering October 18 at Seattle's Museum of History and Industry, where Cary had last May previewed his forthcoming book, *The Race for Bandwidth* (Microsoft Press).

As he did with everything else, Cary faced his illness with courage, dignity, and wry humor. Ultimately, he will be remembered—and missed—as much for his generosity, candor, humility, and concern for others as for his technological prowess. **m**

You were born CREATIVE, *not* patient.

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New Products

THE LATEST MACINTOSH RELEASES

Edited by Keith Mitchell

DISPLAY

Multiplying Monitors

If you need high resolution but don't have the desk space for a 21-inch display, Sony (408/432-1600, www.sony.com/pc) and ViewSonic (909/869-7976, www.viewsonic.com) have monitors for you.

• Sony's CPD-120VS Multiscan Multimedia Display is a 15-inch monitor with a 13.9-inch-diagonal viewable area. The $529 display system has built-in speakers with a subwoofer and supports resolutions up to 1,280 by 1,024 pixels.

• ViewSonic's P775 17-inch monitor, priced at $799, has a 16-inch-diagonal viewable area and a maximum resolution of 1,600 by 1,280 pixels. The G773, another 17-inch display system, supports resolutions up to 1,280 by 1,024 pixels and costs $699.

The Writing on the Wall

Projector manufacturers are pushing the technology envelope with new lower-priced products.

• The 14-pound DP9200 projector, from Proxima (619/457-5500, www.proxima.com), offers 1,024-by-768-pixel resolution at 500 lumens. The $11,999 projector includes a 1.6:1 motorized zoom lens and computer and video inputs. The $7,999 DP5800 provides 800-by-600-pixel resolution at 650 lumens. It weighs 19 pounds.

• The Polaview 315, from Polaroid (716/256-4436, www.polaroid.com), projects up to 1,280 by 1,024 pixels at 600 lumens. It has a PC Card reader that enables presenters to put their data on a PC Card for computer-free use. Also included are zoom and picture-in-picture capabilities. The projector weighs 21.5 pounds and costs $11,995.

GRAPHICS

Thumbnail Views

You've got lots of images stored on a variety of media. How do you find the one that's right for your latest project? ImageBook 2.0, from Gamut Imaging (714/779-2421, www.gamutimaging.com), scans your disks for images, automatically generating custom proof sheets and thumbnails. You can annotate the images and specify dimensions for images and proof sheets. The $100 program supports more than 40 image file formats. An enhanced version, ImageBook 2.0 Pro, priced at $250, supports Kodak's Photo CD discs and includes watermarking notification.

MULTIMEDIA

Lights, Action, Camera

DigiEffects' (415/841-9901, www.digieffects.com) $695 CineLook Broadcast plug-in for Adobe After Effects adds grain to the red, green, and blue video channels to achieve a match between video and film footage. The software uses its own frame-blending process to soften the video frames. Editors can use the standard After Effects plug-in interface or a customized interface that emulates stand-alone video-editing hardware.



DigiEffects CineLook

ONLINE

Video When?

A new streaming content-creation tool, VivoActive VideoNow 2.0, from Vivo Software (617/899-8900, www.vivo.com), is a simplified version of the company's VivoActive Producer. Intended for Web sites with moderate traffic, the $119 software provides the core features of VivoActive Producer, including voice and FM-quality audio, predefined settings of streaming parameters, and a simplified user interface.

Searching High and Low

WebFind Assistant 1.0.1, from Crush! Software (718/263-0313, www.crushware.com), gives desktop access to popular search engines. The Mac-only program appears as a floating palette on the Mac desktop. You enter a keyword or phrase, choose one of seven search engines from a pull-down menu, and click on the Search button. The software then launches versions 2.0 or later of Netscape Navigator and Microsoft Internet Explorer and displays the results. A single-user license is $20.

X Marks the Spot

Boutell.Com (206/325-3009, www.boutell.com) has released a Mac version of its image-map–editing tool, Mapedit. The $25 software lets you add clickable hot spots to your Web images without using a separate image-map file. Mapedit 2.3 saves the hot spots directly into the HTML code. It requires Apple's Macintosh Runtime for Java 1.5.

PRINTING

Pablo's Printer

With CD recorders more popular than ever, recording artists and multimedia developers need their discs to look good. The $1,199 Picasso CD Color Printer, from Mediastore (714/974-5551, www.mediastore.com), uses thermal ink-jet technology to print 24-bit, 300-dpi images on CD-R media. It can print one CD label in about two minutes.



Picasso CD Color Printer

PRODUCTIVITY

Beyond Charts

Tired of making presentations with the same old static chart? Spice things up with Adrenaline Charts SE 1.0, from Adrenaline Software (418/658-9909, www.adrenaline.ca). The $60 program enables you to integrate pictures, textures, QuickTime movies, and QuickDraw 3D objects into multimedia charts. The charts can be exported as PICT files, JPEG images, or QuickTime movies for use within presentation programs. Data can be imported from Microsoft Excel and ClarisWorks.

SYSTEMS

Don't Let a PC Stop You

Are you stuck working on a PC because of your job? Check out Gemulator 98 Advanced Edition, from Emulators (206/236-0540, www.emulators.com). It's a $200 Windows package that lets a PC emulate a 68040 (or earlier) Mac. It includes a half-size ISA card that holds Mac ROM chips, for speedier emulation. You can use any version of the Mac operating system, including Mac OS 8, but the product can't run PowerPC-native applications.

VENDORS: TO HAVE YOUR PRODUCTS CONSIDERED FOR PUBLICATION IN *NEW PRODUCTS*, SEND A PRESS RELEASE WITH PRODUCT DESCRIPTION, PRICE, AVAILABILITY, AND CONTACT INFORMATION FOR READERS. PLUS OPTIONAL PHOTO OR SCREEN SHOT, TO NEW PRODUCTS EDITOR, *MACWORLD*, 501 SECOND ST., SAN FRANCISCO, CA 94107; NEW_PRODUCTS @MACWORLD.COM.



Set Your World in Motion

New Bryce 3D lets you create incredibly realistic, fully animated 3D worlds. Where rivers rush through gorges, the sun sets over the ocean, or mist evaporates to reveal flocks of birds soaring between mountain peaks. It's just like the real world–only you're in control!

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Unbelievably realistic terrains. Paint height values for peaks, valleys, plateaus, and erosion, then animate the entire scene to show the forces of nature in action. For instant results, check out the real-time, rotating 3D preview.

Fully animatable materials and textures. Picture brick transforming into flowing water. Or a snow capped mountain emerging from winter into spring. Now you can make it happen!



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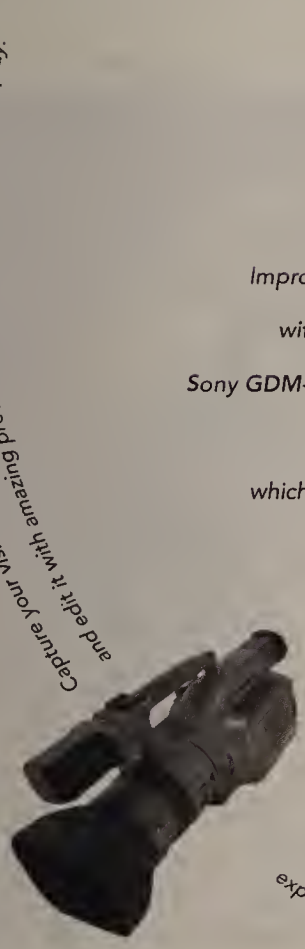


Right out of the box, the **Sony VAIO Tower** *(shown with VAIO 220VS Display) has all the software and processing power needed to explore digital imaging, video editing and website publishing.*



Wirelessly beam your favorite photos from Sony's **DSC-F1 Digital Still Camera** *straight to your PC†, then show them off to your family and friends using your Sony display.*

Capture your vision in vivid detail with the **DCR-VX1000 Handycam® Camcorder** *and edit it with amazing precision and clarity on your Sony display.*





Improve your world view with the new vertically-flat **Sony GDM-400PS 19" Trinitron® Display,** *featuring an 18" viewable image, plus Active Signal Correction (ASC™) circuitry, which automatically sizes and centers your image at the touch of a button.*



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There is a place where ideas bask in sheer beauty, intense color and amazing clarity. But until this moment, it was only in your mind. Introducing the Sony GDM-400PS, one of 14 displays designed to bring your imagination yet another step closer to reality. VAIO In addition to Sony's renowned Trinitron technology, the GDM-400PS also features a new flatter (over 40%*) CRT design for more accurate images, not to mention less glare. Plus Sony's new Elliptical Correction System improves image accuracy up to 35%.** And finally, like all of our displays, the GDM-400PS is fully compatible with your PC or Mac.® Just open the box to all the possibilities. And your mind is sure to follow.

SONY

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*Sony's new 19" and 21" CRT technology is 40-50% flatter than traditional aperture grille and FST CRTs. **Up to 35% improvement in beam shape accuracy over last year's model. †Supports Microsoft Windows® 95 IrDA Device Driver Version 2.0 (included). — IrDA adapter for computer required. SOITA-04

Reviews

Quicken Deluxe 98

NEW VERSION ADDS EVEN MORE GOODIES TO A POPULAR PRODUCT



BONNIE RIESER

QUICKEN, INTUIT'S LEGENDARY financial manager, was once a simple but rich and rewarding product—kind of like a bowl of really good vanilla ice cream. Over the years, Quicken upgrades have added basic sundae toppings, in the form of financial-planning tools, QuickTime movies, interactive help, and more. With Quicken Deluxe 98, Intuit adds the financial equivalent of nuts, sprinkles, and M&Ms: No one will have trouble living without built-in Internet access to mortgage and insurance information, an emergency records organizer, investment help, or a tax-deduction finder, but many people will benefit from them. Intuit has also enhanced the basic program's appeal with subtle but satisfying changes to the registers, reports, and reconciliation features.

Plain-Vanilla Pluses

Registers—Quicken's detailed checkbooklike account lists—sport a new Shortcuts button that lets you schedule or move transactions via a pop-up menu; the same menu lets you quickly create reports on a transaction's payee or category. In addition to showing transactions with multiple categories or memos, the Splits window now automatically changes size to display more items. The Registers' nicest new feature, though, is the account bar, which appears at the bottom of the screen and lets you quickly switch among accounts. (Unfortunately, only the five most recently opened accounts appear in the bar, and you can't set it to always include your favorite accounts.) A new Total line at the bottom of the account list allows you to view your net worth without having to create a report or graph.

Quicken's reports have gained some wonderful features too. The Sample view generates an example of a report when you click on its name in the report list, to give you an indication of whether it's the report you're seeking. Some report styles have changed in this version; notably, negative items now appear in red. Oddly enough, this alteration means that if you've overspent your budget, the difference appears in black; if you still have money left to spend, the difference is shown in red—a difficult shift to grasp.

Much more significant are Quicken's new icons and pop-up menus that let you edit your report's fonts, dates, headers, titles, and other elements from within the report itself. This editing ability alone makes the upgrade to Quicken 98 worthwhile for anyone who regularly uses reporting features.

If you've ever struggled to decipher the Reconcile window, you'll appreciate

REAL PRODUCTS REAL RATINGS

Reviews you can trust: Unlike other publications, Macworld rates only final shipping products, not prototypes. What we review is what you can actually buy.

Outstanding ★★★★★ = 9.0–10.0 Very Good ★★★★ = 7.0–8.9 Good ★★★ = 5.0–6.9 Flawed ★★ = 3.0–4.9 Unacceptable ★ = 0–2.9

the instructions displayed within the window itself; a check box lets you hide the instructions if you don't need them (see "Green Is Good"). The Status window shows your balance and cleared items, as well as the difference between the bank's balance and your own (highlighting what remains), and cleared items now appear in green. The New Transactions button lets you quickly add transactions you've forgotten, and the Smart Reconcile feature tracks previous reconciliations, making it easier to review your past records and uncover any problems.

Quicken's internal online banking features have been improved as well. By signing up for Intuit Online Payment ($9.95 per month, administered by the same group that handles the popular CheckFree service), you can make online payments from any U.S. checking account or any other domestic account that lets you write drafts or checks. The Payment Log shows all your activities for a 60-day period and lets you edit or cancel transactions or retrieve information about the status of your payments.

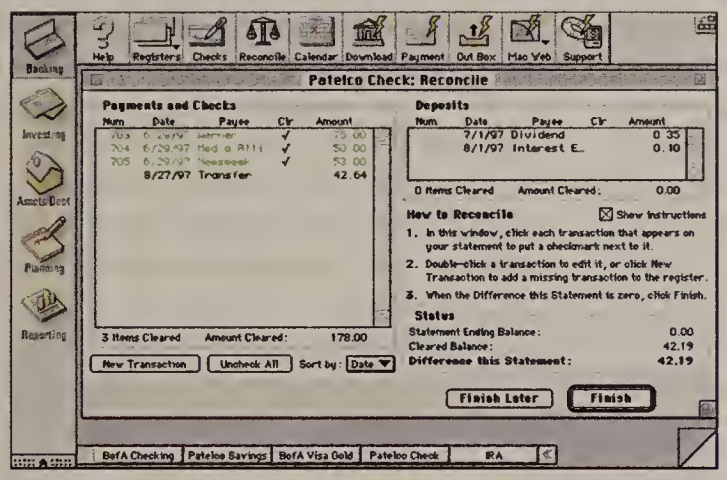
You can also apply for online banking services from a long list of financial institutions that work with Intuit. Unfortunately, the Web-based sign-up process proved confusing and difficult: I'd recommend getting the information you need from your bank before attempting anything within Quicken. If you already use online banking, you'll be pleased to discover the revised Download Transactions screen, which includes downloaded data and the account register in one screen. At last you can make edits without switching windows!

Chocolate or Multicolored Sprinkles?

A pleasant addition to Quicken 98's Deluxe version is QuickEntry, a fast, simple utility that lets you enter transactions into registers without opening the Quicken application. It's small enough that you could keep it open permanently, but since it doesn't have a close box—you're stuck with a window permanently open on your screen—you may not want to. The next time you open Quicken, your transactions are added to your data file.

The new Emergency Records Organizer follows the step-by-step model of Quicken Deluxe's earlier Net Worth and Retirement planners. It's not particularly elegant, but it does let you store information about all your important records, from birth certificates to investment documents, in one central location. The Organizer includes a valuable password-protection feature that protects you from having your Social Security, credit-card, or bank-account numbers fall into the wrong hands in case of burglary or unauthorized use of your Mac.

Following the same planner model, the Tax Deduction Finder leads you step-by-step on a search for qualifying expenses. This process has great potential, but despite the complexity of my own taxes, it was a waste of time—I didn't find a single item I'd missed. Maybe next year.



Green Is Good In Quicken 98's new Reconcile window, cleared items are displayed in green, making it easy to see which transactions you've reconciled and which you haven't.

Overall, not much has been changed in Quicken's investment module, but a new graph option lets you display multiple investments on a single chart. Unfortunately, the graph couldn't compensate for a stock split (despite a check box that *should* have enabled this capability) and occasionally had trouble displaying all of my chosen securities, even when they appeared properly in the key.

Online Additions

Intuit has added links within Quicken to Web sites featuring insurance, investment, mortgage, and financial-planning information. These sites are interesting and provide some valuable data, but it's important to note that you don't need Quicken to use them.

To set up Quicken for Web access, you could follow the step-by-step Apple Guide instructions via the Getting Started With Online Banking command, but my advice is to avoid them. During several attempts to use the directions, I found them highly erratic, with random red lines or circles appearing in odd places and steps being skipped entirely. Luckily, it's easy enough to set up Web access without the directions. Just choose Preferences from the Edit menu, click on the Internet icon, select a connection method —AOL, CompuServe, or ISP—and then choose a Web browser.

With Web access enabled, you can check out all sorts of financial-planning information as quickly as your modem allows. The InsureMarket site lets you see quotes on life insurance from top companies (the company plans to add quotes for auto and homeowners' insurance this fall and winter, respectively), and the NetWorth site offers stock news, price charts, and dynamic graphing for investors. There's also an online tax center with tips and suggestions and a mortgage center that provides rate comparisons from leading lenders. Like most other Web sites, these sites are all regularly updated and upgraded. I occasionally encountered broken links and "file not found" errors, but the dynamic aspect of the Web means that you may also discover new and interesting information to improve your financial life on an ongoing basis.

Macworld's Buying Advice

Like many other Quicken users, I was perfectly satisfied with the bowl of plain-vanilla ice cream I had years ago in Quicken 4. Over the years, I haven't always been enchanted with the trade-offs each new version has brought, but overall—despite some fit-and-finish problems—I'm pleased with Quicken 98. The new report features found in both Quicken Basic 98 and Quicken Deluxe 98 are wonderful, while QuickEntry (found only in the Deluxe version) is quite handy. I can take or leave most of the other new features—specifically the Web links and the Emergency Records Organizer. Like M&Ms on a sundae, they're nice to have but far from essential.—WENDY SHARP

RATING: ★★★/6.9 **PROS:** Flexible report features; fast, handy QuickEntry utility in Deluxe version. **CONS:** Minor bugs; Internet features aren't Quicken-specific. **COMPANY:** Intuit (415/944-6000, www.intuit.com). **LIST PRICE:** Deluxe version, $59.95; Basic version, $39.95.

Maxpowr Pro Series

POWERPC 750 CARDS MAKE GOOD ON TSUNAMI ARCHITECTURE'S UPGRADE PROMISE

THE CLONES ARE DEAD, AND I miss them already. Power Computing, Umax, and others had a terrific habit of releasing new technology earlier than Apple and selling their wares at competitive prices. Motorola was poised to ship its StarMax Pro 6000/300, the first computer based on the lightning-fast PowerPC 750 CPU (code-named G3), as Mac OS licensing was halted. Three weeks later, after the termination of the StarMax 6000 and other G3 clones, Apple announced plans for its own midrange PowerPC 750 machines, all with processor and cache bus speeds slower than those of the planned StarMax Pro.

Newer Technology's Maxpowr Pro processor cards reputedly work with any upgradable Power Mac (except Power Computing's Catalyst-based PowerCenter series): Apple's 7300, 7500, 7600, 8500, 8600, 9500, and 9600; Power Computing's PowerWave and PowerTower Pro series; and Umax's SuperMac J700 and S900 series. You take the old processor out, put the Maxpowr Pro in, press the logic-board reset button, and you're in business. I tested a Maxpowr Pro+ in my SuperMac S900/200 and had everything up and running without incident in a matter of minutes. Macworld Lab tested the cards in a sampling of machines from Apple and Power Computing. The Lab couldn't get the Maxpowr Pro to work with a Power Mac 7300 with the card set to its highest speed (50MHz), but otherwise the Maxpowr Pro proved compatible across the board.

The two models in the Maxpowr Pro series sport slightly different clock speeds and radically divergent prices. The 250MHz Maxpowr Pro lists for $1,395 (about $1,250 street), whereas the 266MHz Maxpowr Pro+ costs a whopping $2,499 (about $2,200 in stores). The reason for the $1,100 discrepancy has little to do with the minor 16MHz difference in clock speed and almost everything to do with the size and speed of each card's cache.

Backside Boost

In most 604e-based Macs, data travels between the cache and the CPU over the system bus, which tops out at 50MHz. The Maxpowr Pro cards are the first to employ backside cache, in which the cache resides directly on the processor card and links to the CPU chip via an independent bus. The less expensive Maxpowr Pro has a 512K cache that communicates with the CPU at 125MHz, half the CPU's clock speed. The high-end Maxpowr Pro+ includes 1MB of cache with a backside bus speed of 177MHz, 67 percent of the CPU's clock speed.

In Macworld Lab's SpeedMark tests, the 250MHz Maxpowr Pro boosted the overall speed of an aging Power Mac 7500 by more than 200 percent, a speed surpassed only by that of the new Power Mac 9600/300. With the 266MHz Maxpowr Pro+ installed, the 7500 beat even the 9600/300, being 6 percent faster in the SpeedMark CPU tests and 9 percent faster in the FPU tests. Both cards would have performed even better if we had outfitted the 7500 with a new hard drive and video card, but the older hardware is more in keeping with the experiences of typical users. Most upgradable Power Macs will benefit dramatically from having either of Newer's Maxpowr Pro cards.

Macworld's Buying Advice

I was amazed by the increase in the speed of my SuperMac S900. The machine started up about 50 percent faster, I didn't have time for my usual coffee break while launching Microsoft Word, and I was able to play a 320-by-240-pixel QuickTime movie at the full 30 frames per second without special acceleration hardware. The only drawback is the price—particularly that of the Maxpowr Pro+, which costs more than Apple's 266MHz G3 system (see "Apple's Next-Generation Systems," in this issue). Luckily, forthcoming PowerPC 750 cards from PowerLogix and Total Impact should provide a more competitive atmosphere and lower prices all around.—DEKE McCLELLAND

Maxpowr Pro Series

MAXPOWR PRO 250/125 ★★★★/7.1

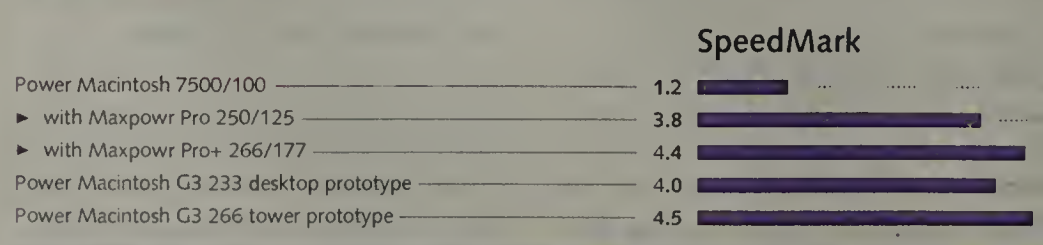
MAXPOWR PRO+ 266/177 ★★★★/7.2

PROS: Virtually doubles the speed of Power Macs that have upgradable CPUs. **CONS:** Price of Maxpowr Pro+ equivalent to that of a new computer. **COMPANY:** Newer Technology (316/943-0222, www.newertech.com). **LIST PRICE:** Maxpowr Pro, $1,395; Maxpowr Pro+, $2,499.

Macworld LAB TEST

Maxpowr Pro Series: Cache Boosts Performance

Longer bars are better. An Apple Power Macintosh 7100/80 has a SpeedMark score of 1.0. ►New product.



CPU	FPU	Disk	Video	Star Rating
1.2	1.1	1.2	1.9	discontinued
4.4	4.3	2.0	4.5	7.1
5.2	4.7	2.2	5.7	7.2
4.5	4.1	2.7	6.5	not shipping
5.0	4.2	3.0	6.9	not shipping

Behind Our Tests All PowerPC 750 products, except the Maxpowr Pro+ 266/177 (which has 1MB of cache), have 512K of cache. For detailed information on our methodology, refer to www.macworld.com/tests/.—**Macworld Lab testing supervised by Jeffy Milstead**

ClarisWorks Office

INTEGRATED PACKAGE IS STILL A SUITE DEAL

OFFICE SUITES TYPICALLY INclude industrial-strength programs, any one of which is a top contender in its field. In the Windows realm, Microsoft Office, Lotus SmartSuite, and Corel WordPerfect Suite, contain Excel 97, Lotus 1-2-3 97, and Quattro Pro 8, respectively—all top-quality spreadsheet programs.

Viewed in that light, ClarisWorks Office is more marketing spin than powerhouse collection. Built around the minimally revised ClarisWorks 5.0, ClarisWorks Office offers a great value—especially if you don't already have an existing set of software and need an all-in-one productivity package—but owners of ClarisWorks 4.0 shouldn't rush to upgrade.

Small Changes, Big Value

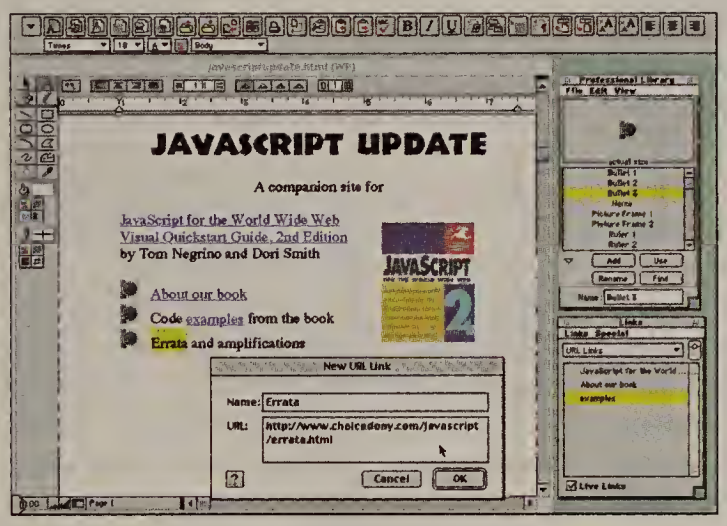
The core of ClarisWorks Office is ClarisWorks 5.0, and once again, Claris has chosen to refine the program's features rather than indulge in wholesale change. This incremental approach ultimately proves successful; ClarisWorks 5.0 is easier to use than its predecessors, thanks to a fully customizable button bar that replaces the old Shortcuts floating palette and allows you easy access to virtually all of ClarisWorks' features. You can create new buttons, move or delete predefined buttons, and switch among button bars. A pop-up menu switches you to the Internet button bar, and a single click launches your preferred mail program.

Alas, Claris has once again missed the opportunity to integrate its different products tightly. If you're willing to invest a bit of time in scripting, though, ClarisWorks' buttons can store macros or trigger AppleScripts, to provide a wide range of integration possibilities. I can easily imagine addressing a letter by typing my correspondent's name and then pressing a hot key that would look up the person's mailing address from Claris Organizer and insert the address automatically. Unfortunately, that just isn't possible unless you write a script yourself.

Web Works

But ClarisWorks 5.0 *does* integrate well with the Internet. Within any word-processing document, spreadsheet, or drawing, you can create hyperlinks (called bookmarks) that connect to other places within the same document, to other ClarisWorks documents, or to Web pages via embedded URLs. Clicking on a Web link launches your preferred browser, connects your Mac to the Internet, and loads the specified page.

You can also create simple Web pages within ClarisWorks' word processor, thanks to a much improved HTML-conversion translator. The included Claris Home Page Lite lets you create more-ambitious Web pages but lacks the full version's support for direct HTML editing, frames, and forms, among other features. Two Internet service providers' packages on the CD-ROM include Web-browser software and a program that helps you get signed up to the service and onto the Internet quickly.



Making Connections ClarisWorks' new hyperlink feature lets you create URL and document links from the Links palette, and Web pages you create can then be exported as HTML. The expanded clip-art libraries provide graphics pizzazz.

More Modest Enhancements

Other ClarisWorks changes are relatively minor. The word processor's text ruler has been reorganized, with helpful page guides that appear when you move margins or tabs. A new equation editor aids science- and math-oriented users, and the Function button on the spreadsheet's status bar makes it easier to insert math functions. You can—at long last—name cells and ranges, and rows and columns can now autosize to their contents.

Within the database module, the new Multimedia field type lets you store pictures, sounds, or QuickTime movies, and database fields can hold up to 1K of text—double the previous limit. The new Texture palette offers 120 options and works with the painting module's spray can, bucket, and brush tools and with the fill tools within the draw module.

Novices and professionals alike will appreciate the vast quantity of stationery documents bundled with ClarisWorks Office. The JIAN Business Basics collection includes 64 useful word-processing and spreadsheet templates for common business operations. In addition to more than 20 accounting spreadsheets, management templates include, for example, articles of incorporation, public-relations documents, and worksheets for trade-show planning. Claris has also added more than 200 other stationery layouts for home, business, and school users. New clip-art libraries include more than 1,000 images that can be used for slide shows, drawings, and Web pages.

Macworld's Buying Advice

ClarisWorks Office preserves the true strengths of the original ClarisWorks: It requires a mere 2.5MB of RAM and still works on any Mac with a 68020 processor or better. Speed complaints are rare with ClarisWorks, and the various modules work exceptionally well together. Although the ClarisWorks Office components lack the depth of features available in their Microsoft Office counterparts, they're more than sufficient for home, school, and small-business users—at a cost savings of hundreds of dollars. ClarisWorks 4.0 users probably won't find any pressing need to upgrade, but if you're buying your very first Mac, ClarisWorks Office provides all the software you'll need to get started.—TOM NEGRINO

RATING: ★★★★/8.3 **PROS:** Good stationery and clip art; welcome, though minor, improvements to ClarisWorks. **CONS:** Less office than you might expect. **COMPANY:** Claris (408/727-8227, www.claris.com). **LIST PRICE:** $99; $30 rebate for upgrades.

Personal Information Managers

LOTUS ORGANIZER 97 GS, ACT 2.8 ADD LITTLE TO THE GENRE

LOTUS ORGANIZER IS THE LATEST entry into the crowded personal-information-manager (PIM) market, while Symantec's Act has been around for years. But although they approach their duties from two radically different directions, neither product brings much to the table that existing PIMs don't already offer.

Contact Central

Offering more than 70 customizable fields, Act 2.8 handles any kind of contact information you can throw at it. Pick lists—pop-up lists of predefined entries—cut down on typing, but an autocompletion feature would work better. Based on the assumption that you'll always want to associate activities with a particular person, Act has you schedule events by clicking on fields in the contact window.

Organizer's methods are less contact-centric; you shuttle among seven individual sections by clicking on tabs. Organizer's address-book module isn't as comprehensive as Act's, but it's probably sufficient for most people's needs. Data-entry shortcuts are limited, however.

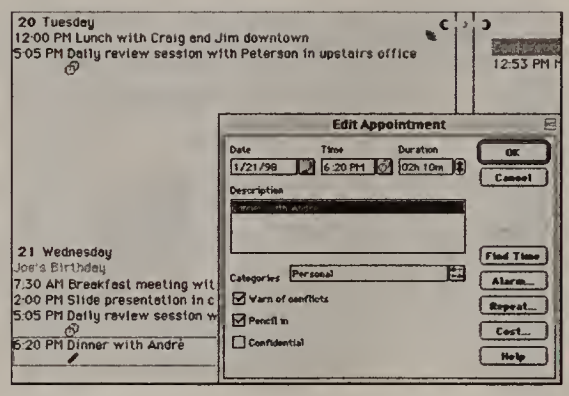
Both PIMs let you track interactions with clients, although Act—with its ability to automatically record and display all events associated with a given contact—proves much more comprehensive. Organizer lets you schedule and record details about phone calls, but there's no way to associate a to-do or anniversary item with a particular person.

Time Control

Managing schedules and to-do lists never has been Act's strong suit, although the latest release incorporates several enhancements, including the ability to display more event information in calendar windows. Unfortunately, some annoying limitations still haven't been remedied. Act's scheduling dialog box doesn't provide sufficient room for event descriptions, and there's no way to accommodate to-do items that aren't associated with a particular date.

Organizer's time-based functions are spread across five modules. Fortunately, you can create a new entry in any section without leaving the module you're working in. Organizer also lets you display entries from other sections in your appointment book, so you don't have to switch to the anniversary module to find that you forgot your spouse's birthday.

You can book several events in succession without leaving Organizer's dialog box, and you can "pencil in" tentative appointments (see "Flexible Events"). And although Organizer lets you set alarms for timed events, you have to enter the date and time for the alarm if you want to be notified more than one day in advance. Worse yet, Organizer must be running for you to receive reminders, unlike Act, which uses a separate background application to activate alarms.



Flexible Events Tentative events appear with a pencil symbol in Organizer's day and week views.

Ins and Outs

Over the years, Act has shed its Windows origins and become more like a Mac application, with fewer modal dialog boxes and more resizable windows (see *Reviews*, July 1996), but its interface is still a bit drab for my taste. On the other hand, Organizer commits GUI overkill, serving up a confusing jumble of tools that makes it hard to pick the appropriate icon; I found it much easier to use Organizer's logically arranged menus.

Both PIMs provide multiple ways to print schedules and contact information, with layouts for several popular paper-based planners. Act even sports an integrated word processor that's more than capable of handling letters and other simple documents. Organizer and Act also let you send e-mail to contacts, but Organizer works exclusively with Lotus Notes. Act lets you use other e-mail clients.

Both programs let you share files over a network, and Organizer lets you perform group scheduling if you use Lotus Notes. Both Symantec and Lotus claim compatibility with their Windows PIMs, but you can't share files with Act 3.0 for Windows. Either program lets you exchange data with other PIMs, but Organizer's import function is flawed: The program requires that every time be preceded by a date, so you may have to rearrange your data before importing it.

Act is twice as expensive as Organizer, but it uses far less memory—4MB versus 11MB—a significant difference if you want to keep your PIM running all the time. Organizer also suffers from a few bugs, ranging from cosmetic problems to occasional unexpected quitting.

Macworld's Buying Advice

If your primary goal is contact management, Act is the better choice of these two products. Organizer is worth considering only if you are already using Lotus Notes and need to do group scheduling. Most users, though, are better off choosing Now's full-featured PIM duo, Up-to-Date and Contact 3.6.5 (see *Reviews*, June 1997). Priced below $100, the pair costs less than Act and provides far more functionality.—FRANKLIN TESSLER

Act 2.8

RATING: ★★★/5.6 **PROS:** Light memory requirement; strong contact manager. **CONS:** Limited scheduling functions; lackluster interface. **COMPANY:** Symantec (408/253-9600, www.symantec.com). **COMPANY'S ESTIMATED PRICE:** $169.95.

Lotus Organizer 97 GS

RATING: ★★/4.0 **PROS:** Efficient event scheduling. **CONS:** Poor import functions; must be running to receive alarms; high memory requirement; works only with Lotus Notes for e-mail. **COMPANY:** Lotus Development (617/577-8500, www.lotus.com). **LIST PRICE:** $85.

Motion-Detection Software

PACKAGES OFFER DIVERSION, SECURITY, FRUSTRATION

EVER WONDER WHO'S MAKING off with your jelly beans while you're away from your desk? Or who's sneaking your office supplies without leaving a note? You can find out by using a motion-detection utility with your video-camera–equipped Mac. Two such utilities, Connectix's DigitalRadar 1.0 and Channel D's DeltaVideo 1.1, offer a range of tools for monitoring, recording, and responding to movement that occurs in front of your computer. DigitalRadar succeeds as a slickly executed amusement; DeltaVideo promises greater precision and analysis capabilities but falters in its implementation.

Setting the Trap

Both packages are a snap to install; with either package, you're ready to begin video surveillance within minutes. Of the two, however, DigitalRadar is more polished and more fun to use. One of its windows displays the camera's field of vision, while the other displays a graphical activity log. You configure the program's various features using well-designed dialog boxes; the documentation is similarly clear and concise.

Unfortunately, DeltaVideo lacks a similar fit and finish. With its garish colors, cramped dialog boxes, window-redrawing gymnastics, and tunneling and blinking cursor, DeltaVideo's interface can cause confusion and headaches. To be fair, it's not a particularly difficult interface to navigate; it's just less pleasant than you would expect from a modern Macintosh application.

Both packages require a 68030 or better processor, System 7.1 or newer, QuickTime (version 2.1 for DeltaVideo and 2.5 for DigitalRadar), 10MB of disk space, and 4MB to 5MB of available RAM on Power Macs. They support standard video sources, including Connectix QuickCams. I tested each with a Color QuickCam connected to a Umax SuperMac S900/233 and a range of older Power Macs.

Secret Weapons

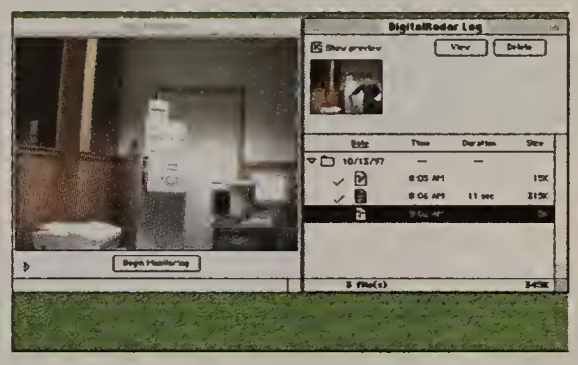
DigitalRadar and DeltaVideo offer different takes on motion-detection video. DigitalRadar defaults to recording motion in a movie format, starting when motion is detected and concluding when motion stops. You can also configure it to take single snapshots. Thumbnails of snapshots and movie clips appear in the log window with corresponding date and time information, and you can view the full-size picture or play the QuickTime movie by double-clicking on its log entry. Unfortunately, there's no way to stamp the time and date directly onto the snapshots or QuickTime videos, nor any way of indicating which location triggered the motion detector.

DigitalRadar provides an option for rendering log files invisible and locked in the Finder, and you can password-protect the logs. If you want to let your prey know they're being watched, you can configure DigitalRadar to play a sound whenever it detects motion (a variety of warning and alarm sounds are included); alternatively, the program can respond by launching a designated application or AppleScript. Date- and time-scheduling options allow you to set up DigitalRadar and have it perform its motion-detection duties without additional intervention.

DeltaVideo defaults to capturing snapshot images when it detects movement, and it allows QuickTime recording only for a fixed period after activation (for example, you can set it to record five seconds of video after a detected movement). Captured images are displayed in an on-screen contact sheet; you have to open QuickTime movies from the Finder. Although DeltaVideo can pass Apple events to other applications when it detects movement, it doesn't offer a built-in alarm or greeting feature. Overall, DeltaVideo is less suited to casual users looking to have a little spying fun.

DeltaVideo does, however, pack some advanced features that make it compelling for more-sophisticated uses. You can limit motion detection to a rectangular area within the camera's field of vision; the application automatically notes the coordinates where motion was detected and can label its snapshots with time, date, numeric coordinates, and a large pointer indicating the area of the picture that triggered the capture. You can tell DeltaVideo to capture snapshots when motion is detected, at regularly timed intervals, or using some combination of the two. DeltaVideo can save log files as a QuickTime movie, creating a time-lapse animation; as a contact sheet; or as a text file—useful for analysis and charting within your favorite spreadsheet application.

But DeltaVideo has several bugs that seriously degrade the user experience. During testing, the program crashed repeatedly when I tried to use its limited-area motion-detection and QuickTime-capture features. I also encountered a variety of less repeatable crashes. Channel D has posted a revision that fixes the most egregious bug, and I was able to work around several of the others.



Busted! Connectix's DigitalRadar monitors your workspace and captures the action to disk.

Macworld's Buying Advice

Although neither of these packages is likely to appeal to serious security experts, each has its virtues. Users looking to add a little fun and function to their Macs will adore DigitalRadar; those with motion-tracking and -analysis needs will find DeltaVideo attractive but its interface and stability problems off-putting.—J. W. DAVIS

DeltaVideo 1.1

RATING: ★★/4.1 **PROS:** Detection-area specification; frame labeling; text export. **CONS:** Rough interface; occasional crashes; poor movie support. **COMPANY:** Channel D (732/933-9388, www.channld.com/sw.html). **LIST PRICE:** $99.

DigitalRadar 1.0

RATING: ★★★★/8.2 **PROS:** Attractive interface; works exactly as advertised. **CONS:** Lacks labeling and text logging. **COMPANY:** Connectix (415/571-5100, www.connectix.com). **COMPANY'S ESTIMATED PRICE:** $29.95.

Video-Effects Software

COMMOTION AND ILLUMINAIRE PAINT SHOW PROMISE BUT NEED SOME REFINEMENT

VIDEO-EFFECTS MAVENS, TAKE notice: two new applications offer relief from repetitive, frame-by-frame tweaking. Discreet Logic's Illuminaire Paint 1.1, an object-oriented video-painting application, lets you control still images in video clips. Puffin Designs' Commotion 1.0.5 video- painting and -compositing application lets you work with multiple video clips. Both offer keyframing and other features for manipulating objects across time, along with Photoshop-like drawing tools and effects filters. But Illuminaire Paint supports a variety of painting and drawing options and third-party effects filters, while Commotion is more useful for adding special effects to a finished product and cleaning up images.

Pretty Babies?

Of the two, only Commotion looks like a mature Mac application. Its interface is similar to Photoshop's, with windows that display information intuitively in collapsible menus. Illuminaire Paint sports more windows than Commotion but fewer tools. Its tool and radio buttons are shallow and have a stenciled look that makes them difficult to read.

But whereas Commotion lacks text capabilities, you can do most or all of your titling in Illuminaire Paint; Illuminaire supports Adobe Type 2 and PostScript fonts, although its text-tool options are woefully limited. Once the type has been rendered, however, manipulating it is easy. Each character appears as a separate object in the Timeline window, making it a breeze to fix typos and create multiple versions of a clip.

Distinguishing Features

Commotion's rotosplining function, its most useful feature, lets you create Bézier paths around objects over time (see "Along the Path"). By changing the shape of the paths frame by frame, you can create animated splines and play them back in real time. However, the most versatile tool in Commotion's arsenal is its Super Clone brush, which allows you to toggle among up to four source images and preview them against the target image before compositing.

Illuminaire Paint's object-oriented approach gives you easy control over keyframing using the Timeline window, which lists all the clip's objects and their properties. By toggling the on/off control button next to objects along the length of a clip, you can let Illuminaire Paint interpolate their movement between the keyframes and save yourself hours of manual labor. Alas, Illuminaire Paint's timeline is a mess; to view discrete objects in the Timeline window, for example, you're forced to pull it out so far as to obscure other palettes.

Illuminaire does support plug-ins for Adobe Premiere and AfterEffects and MetaTools' Final Effects, along with QuickTime, Photoshop, PICT, and Targa file formats. Commotion supports only QuickTime and PICT and doesn't support third-party plug-ins at all, but it has the same drawing tools and effects filters as Illuminaire Paint and adds others that let you avoid having to repair earlier, uncompiled versions of your video. Its wire-removal brush, for example, quickly erases wires and other fine lines. You can set the brush's options to either clone ("restore") pixels from neighboring frames or blend ("seam") adjacent pixels within the frame.

Playback Time

Both applications promise real-time video playback, but only one delivers. Illuminaire Paint's full-size playback is excruciatingly slow—the price of its comprehensive, object-oriented approach. It simply tries to play clips as fast as possible, which is never fast enough to be considered real-time; instead, you must track objects by reading their *x* and *y* coordinates.

Commotion offers a more manageable approach to real-time video playback. Its Load Frames dialog box offers a slider that lets you isolate the frames you need to work on; another slider lets you select a subset of the frames loaded into RAM for playback.

If you have a Power Mac with built-in video input or a video-editing card and at least 156MB of RAM, you can easily get 30-fps playback of uncompressed, broadcast-quality video. And Commotion's Auto Frame Spool option can load subsequent frames into RAM by caching the first frame to a scratch disk, although that slows playback considerably. Illuminaire Paint lets you specify any frame rate you like, but you're unlikely to see anything in the neighborhood of 30 fps.

Although the vendors of both products make substantial performance claims for their software on Macs with minimal available RAM and without video cards, neither Illuminaire Paint nor Commotion makes sense for low-end systems. If you're unwilling to drop a couple hundred dollars on RAM, you'll find the cost of these two downright prohibitive.



Along the Path Commotion's rotosplining function makes matting quick and easy.

Macworld's Buying Advice

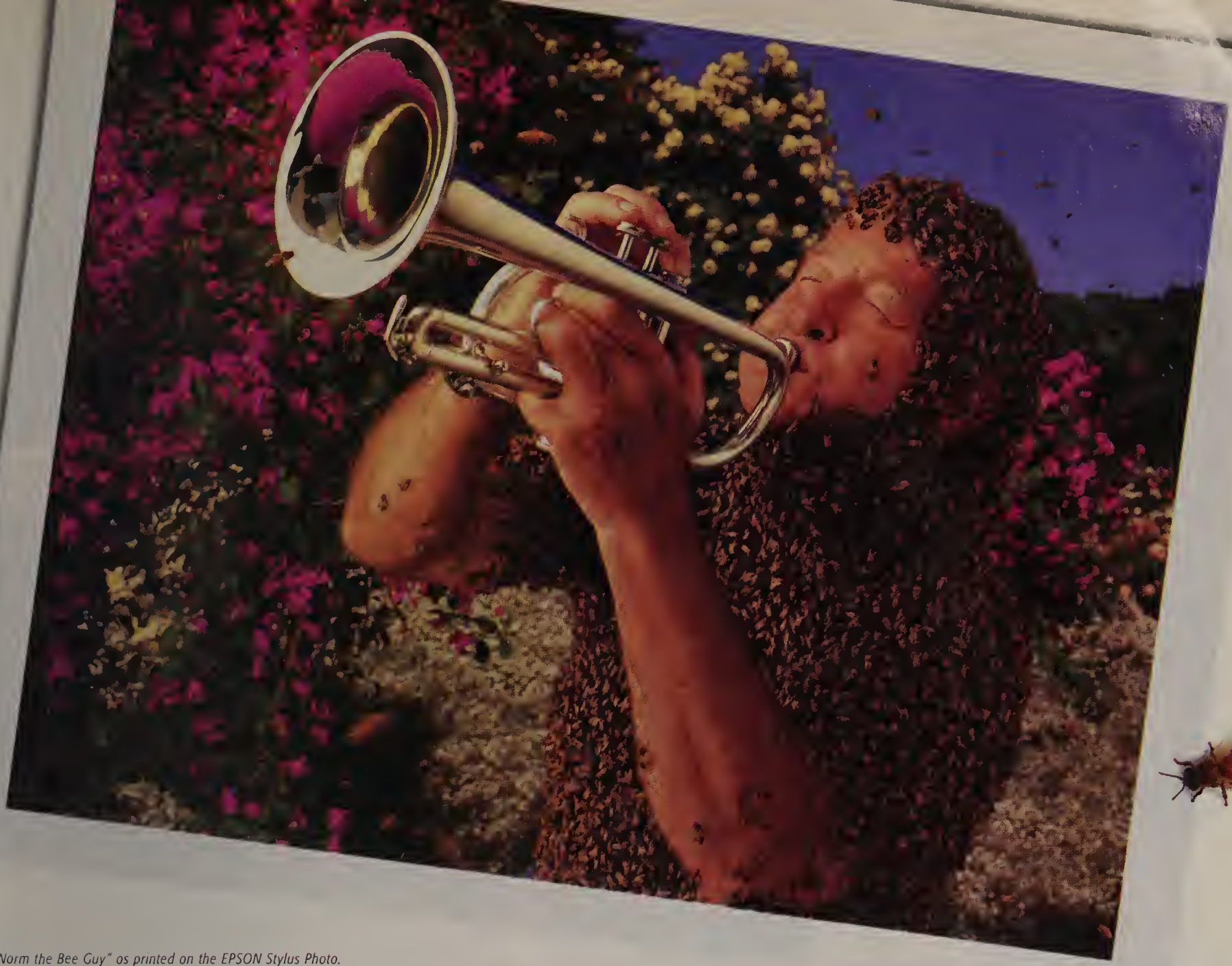
If you need to compile multiple clips in a hurry but don't want to give up basic filter effects, check out Commotion. Illuminaire Paint is too slow and unattractive at this point in its development, but the application does show some promise, particularly in its support for third-party plug-ins.—MARK BAARD

Commotion 1.0.5

RATING: ★★★/5.7 **PROS:** Good design; real-time video playback, even with limited system resources. **CONS:** No support for plug-ins. **COMPANY:** Puffin Designs (415/331-4560, www.puffindesigns.com). **LIST PRICE:** $2,495.

Illuminaire Paint 1.1

RATING: ★★/4.5 **PROS:** Easy keyframing of discrete objects over time. **CONS:** Poor design; slow. **COMPANY:** Discreet Logic (310/618-9700, www.illuminaire.com). **LIST PRICE:** $1,995.



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MP-EG1A

MPEG CAMERA PERFORMS BETTER WITH WINDOWS

HITACHI'S MP-EG1A HINTS THAT the days of separate still-photo and movie cameras are drawing to a close. It's a camcorder, a digital camera, and a voice-recording device all in one. And best of all, the MP-EG1A—which Hitachi has informally dubbed the MPEG Cam—records to a tiny 260MB hard disk instead of tape.

Current digital camcorders rely on Mini DV tapes that are as subject to the arbitrary scourges of munching and snapping as their common VHS cousins. The MPEG Cam wouldn't know a tape if it wrapped itself around the camera like a boa constrictor. Like some digital still cameras, it records to a pocket-size PC Card. But whereas a typical Type II PC Card holds 10MB to 20MB, Hitachi's 260MB Type III PC Card boasts a tiny, surprisingly durable hard drive. I inadvertently dropped the camera from a height of 3 feet onto my driveway without losing a single frame of stored data.

Capacity and Framing

With a 260MB card, the MPEG Cam holds 20 minutes of moving MPEG footage, and you can purchase a 340MB PC Card that holds an additional 26 minutes for $599. The camera shoots 352-by-240-pixel MPEG1 movies at a full 30 frames per second. Although the movies are NTSC-compatible—you can play them out to your television and even record the footage to VHS if you like—each frame is a separate snapshot. The digitized soundtrack is monaural.

You can also shoot 704-by-480-pixel still images. The bundled 260MB card can hold a whopping 3,000 stills—100 times as many as typical digital still cameras—and the optional 340MB card can hold up to 3,900 stills. It's unlikely you'll use the MPEG Cam strictly to shoot still images, but there's plenty of room on the card to rattle off a few snapshots along with your movies.

The MPEG Cam relies exclusively on an LCD screen for framing shots—it doesn't have an optical viewfinder. But unlike other digital-camera vendors, Hitachi bundles a fold-up hood for the LCD, so you can preview your shots comfortably under the harshest light. Hitachi also throws in a remote control, a swivel stand, and two rechargeable batteries—each of which weathers several days of shooting.

The MPEG Cam and the Mac

Hitachi obviously has PC users in mind as the primary market for the MPEG Cam. It comes with an ISA interface card and a wide assortment of Windows software that Mac folks can't use, and the camera started shipping several months before Hitachi unveiled its Macintosh SCSI Interface Kit (which costs an additional $299.95). The kit includes QuickTime 2.5, QuickTime MPEG Extension 1.0.1, and Version 2.1.5 of the Thread Manager, all minimum requirements for playing MPEG Cam movies. If you own a PowerBook with a Type III PC Card slot, you don't need the SCSI Interface Kit but you'll have to download the new MPEG Extension.

As if it's not enough that you have to pay more for them, the Mac hardware and software are a pain to use. I was able to install the ISA card in about ten minutes. By comparison, the Mac version makes you set pins to change the SCSI address, and it must be at the end of the SCSI chain. The Mac transfer utility is clunkier than the similar utility for Windows, and although Hitachi supplies an MPEG decompressor that retains the entire 352-pixel movie width for PCs, Apple's MPEG Extension compresses the frame horizontally to 320 pixels (see "Not a Toy").

Macworld's Buying Advice

The MPEG Cam's still images compare well to those of digital cameras in the $500-to-$1,000 range, and—given that the MPEG Cam holds 100 times as many pictures—multimedia developers with large budgets should have little problem justifying spending close to $2,700. I found the focus on the MPEG videos soft compared to that of their still counterparts and some people may balk at the relatively small frame size and 20-minute capacity, but all are symptoms of the state of MPEG technology, not a Hitachi design flaw. If you have any qualms about investing in this new technology, wait to see if something better comes along. Or wait for Hitachi to come up with a more acceptable Mac bundle.—DEKE McCLELLAND



Not a Toy On a Mac, the QuickTime MPEG Extension scales an MP-EG1A movie to 320 by 240 pixels (**A**). Under Windows, the bundled decoder retains the full 352-pixel width but displays a dithered picture (**B**). Regardless of the platform, a still image measures 704 by 480 pixels (**C**).

RATING: ★★★/6.4 **PROS:** Stores MPEG movies directly to removable hard disk; holds 20 minutes of video or 3,000 still images; includes LCD hood and rechargeable batteries. **CONS:** Mac connection kit costs extra and compares poorly to PC offering. **COMPANY:** Hitachi Home Electronics (770/279-5600, www.mpegcam.net). **LIST PRICE:** $2,399.95; SCSI Interface Kit, $299.95.

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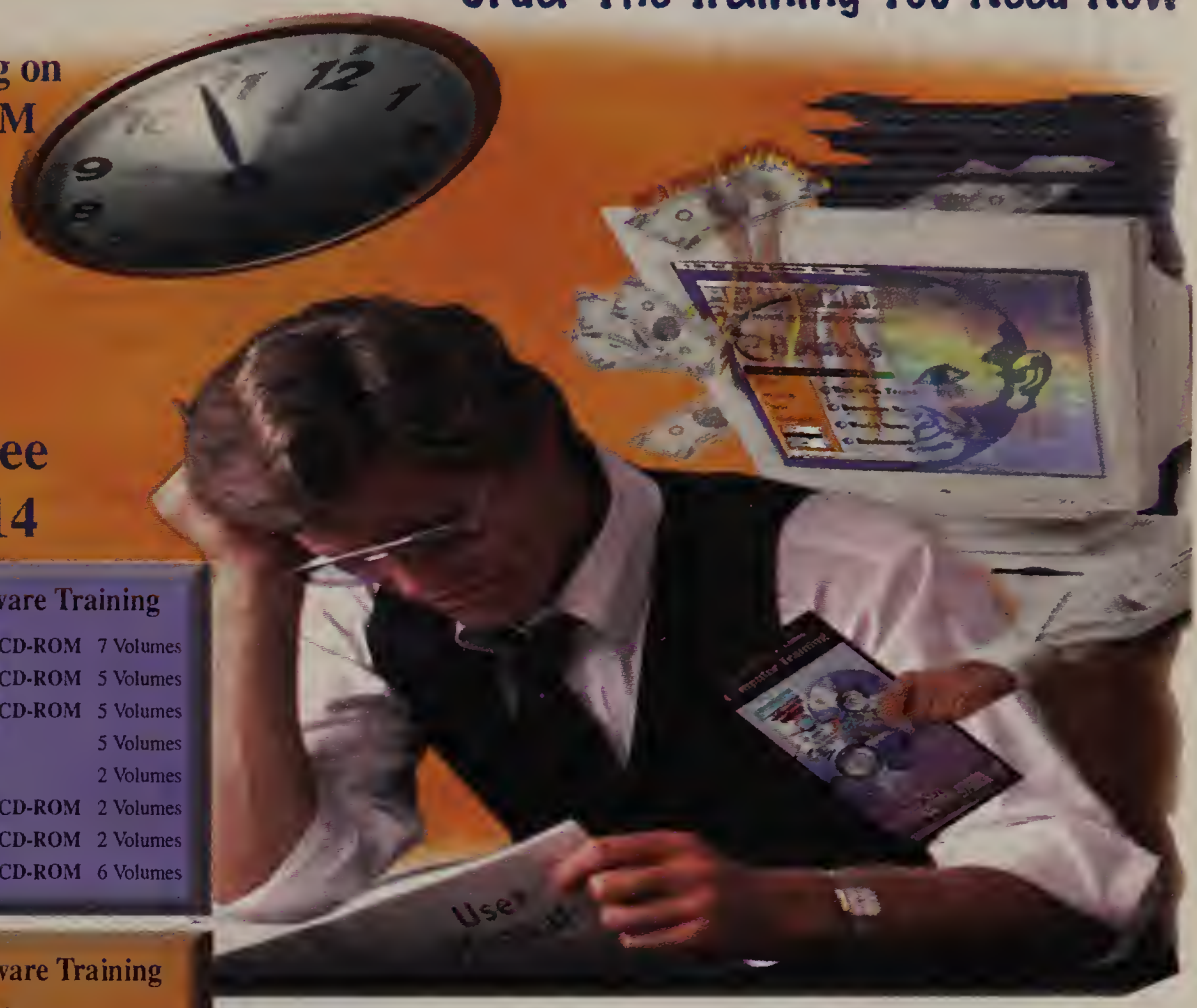
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Cubasis AV

INEXPENSIVE AUDIO AND MIDI RECORDING

THE INTERSECTION OF DIGITAL audio and MIDI recording is one of the hot spots on the music scene. It's a best-of-both-worlds place where the software can record and play back not only audio, such as vocals and acoustic instruments, but also the MIDI note data that synthesizers send and receive. It's a hard neighborhood to get into, though: The top MIDI sequencer/audio-recording programs, Opcode's Vision and Studio Vision series and Mark of the Unicorn's Digital Performer, are complex beasts that range from $395 to $995.

In these surroundings, Steinberg's Cubasis AV 1.0 is a breath of almost-fresh air. This $149 program wraps all the essentials and even a few luxuries in an approachable interface—unfortunately, one marred by design annoyances.

A Lean Music Machine

Cubasis AV runs on any PowerPC-equipped Mac with at least 24MB of RAM. I tested it on a 200MHz PowerBook 3400 with 32MB of RAM. Cubasis AV doesn't require a specialized digital-audio card, relying instead on the Power Mac's built-in sound circuitry.

Cubasis AV arrives on a CD-ROM that also contains 150MB of audio clips—short drum and instrument riffs from which you can assemble your own songs. Being able to build rhythm tracks from existing sounds is one of the great advantages of using an audio/MIDI hybrid: Rather than using a synthesizer's cheesy drum sounds, you can add authentic-sounding drum tracks played by real drummers. (For an overview of canned-audio options, see *Media*, August 1997.)

Unlike most sequencer packages, Cubasis AV was designed to be used with a synthesizer that adheres to the General MIDI standard, which, among other things, dictates that specific instruments be assigned specific patch numbers. (For example, a harpsichord is always patch number 7, regardless of manufacturer.) Cubasis AV's General MIDI support lets you choose instruments by selecting their names from a pop-up menu—no need to remember which patch number summons which instrument. You can use Cubasis AV with a non-General MIDI device, but you'll need to translate the patch names into your instruments' patch assignments.

Making Music

Cubasis AV's nerve center is the Arrange window, where you can record and work with up to 8 audio tracks and 16 MIDI tracks (see "Graphic Arrangements"). The Arrange window works like its counterparts in other programs: You can drag blocks of audio or MIDI data forward or backward within a song's timeline, and a customizable snap-to grid ensures that parts begin on the beat.



Graphic Arrangements Cubasis AV's Arrange and Audio Mixer windows let you manipulate and mix tracks.

One of the beauties of MIDI is the freedom to correct flubs and tweak intonation. Cubasis AV has first-rate MIDI-editing features: A graphical editing window displays a MIDI track's data in piano-roll form, and you can change notes by dragging them or create new notes using a pencil or paintbrush tool. When you want extra precision or need to work with non-note data, such as patch changes, you can also edit MIDI tracks in a text-based event window. If you're feeling retro, you can work with track data in standard music notation. Cubasis AV can also print scores, although it isn't intended to be used as a notation program.

Cubasis AV offers two on-screen mixer windows whose sliders and controls mimic those of a conventional audio mixer. With the MIDI Mixer, you can assign specific General MIDI instruments to each track and adjust each track's volume and left/right panning. If your instrument uses the General MIDI GS or XG extension, you can also control its built-in reverb, chorus, and filter.

A separate Audio Mixer window lets you mix audio tracks; you can also apply real-time reverb and echo effects to your tracks. Cubasis AV's effects lack the sonic realism of high-end effects plug-ins or hardware, but they sound good—and their presence is a pleasant surprise in an entry-level program.

Sour Notes

Cubasis AV was rock-solid in my tests, but the program's rough edges show a lack of attention to detail: The commonly used Import Audio command lacks a keyboard shortcut, and you can't drag and drop audio files from the Finder. The Transport window lacks a rewind-to-beginning button (if you experiment, you'll find that double-clicking on the Stop button has the same effect). Commands unavailable at a given time aren't dimmed, as they should be. And the program's error messages are an adventure in free-form grammar and punctuation.

Cubasis AV's printed manual is an awkwardly written 76-page booklet. A detailed manual is included in Adobe Acrobat form on the CD-ROM (which also contains some QuickTime-based tutorials), but it's no model of clarity, either.

Macworld's Buying Advice

Cubasis AV's shortcomings don't completely dampen my enthusiasm for this program. In a world of kitchen-sink sequencers that contain features many people will never use, Cubasis AV is a refreshing change. If you're interested in testing the waters of audio/MIDI integration, particularly if you use General MIDI instruments, it's well worth considering.—JIM HEID

RATING: ★★★/5.9 **PROS:** Inexpensive; easy to use; solid MIDI-editing features. **CONS:** Poor documentation; numerous interface flaws. **COMPANY:** Steinberg (818/993-4161, www.steinberg.net). **LIST PRICE:** $149.

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Genealogy Software

USE YOUR MAC TO FIND YOUR ROOTS

THE MAC IS THE PERFECT TOOL for family-history nuts. Not only does it make recording, storing, and organizing family data efficient and enjoyable but the Internet also lets genealogists worldwide effortlessly swap information. Three software companies have revved their genealogy programs—and one is sensational.

Family Tree Maker Deluxe

Broderbund's Family Tree Maker (FTM) is the best-selling Windows genealogy program: Its crystal-clear design features a simple, large-font card for each husband and wife. Filing-folder tabs take you to the card for each person's parents and children, making it simple to climb up or down the family tree. Since the program recognizes names and places, its autofill feature saves typing—a necessity for a hobby that involves repetitious data entry.

Nonetheless, FTM is a flop as a Mac program. Its installer deposits an unforgivable 11 extensions into your System folder, and the program needs 10MB of RAM. For example, click on the main dialog box's close box, and the whole program unceremoniously quits. The manual highlights Windows screen shots. And a critical feature is surprisingly missing: The program doesn't accommodate photos (let alone sound or movies).

Indeed, FTM's greatest attraction isn't the program itself; it's the promise of instant research gratification. FTM links directly to a huge private Web site and can access any of 60 optional CDs filled with genealogical data. (They average $30 apiece; this version includes three.)

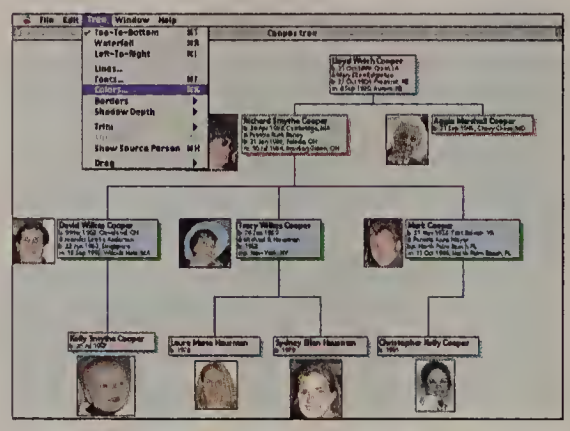
The CDs include little more than public-domain government records; worse, the actual program relentlessly pressures you to buy the CDs. For example, the built-in FamilyFinder command lets you search 115 million names. Great, except that it doesn't produce any useful data on its "hits"—it simply identifies the CD you must buy to *get* information.

Ultimate Family Tree Deluxe

Family Tree Maker isn't the clunkiest genealogical PC port on earth; that honor goes to Palladium Interactive's Ultimate Family Tree Deluxe—an equally resource-hungry, Mac-hostile database that doesn't even offer good design as a consolation. This Microsoft FoxPro document takes over a minute to load and requires 35 seconds to import a ten-name text file.

Click in a blank field and try to type—nothing happens. There's no autofill, and you must put annoying slashes around each last name. You're required to burrow through three nested dialog boxes to add a spouse or attach a photo. And the program's text labels are hilariously clumsy.

To be sure, deep inside the FoxPro database beats the heart of a real genealogy program. Here you'll find you can



Family Reunion 5 Reunion's SuperChart program lets you tweak family tree charts in every way.

add photos and generate tree charts. There's even direct integration with the Palladium Web site, and the Netscape Navigator-based, narrated slide show offers valuable research hints. But genealogy software should save time, not waste it.

Reunion 5.02

If FTM and UFTD are modeled for the PC, Reunion 5.02 is blue-blood Macintosh. The results are spectacular. Talk about optimized: This fast, elegant program comes on one floppy disk. It accommodates any family setup: multiple marriages, same-sex marriages, adoptions, even unknown gender. The program's attractive "family cards" offer autofill, autocapitalization, a "ditto" keystroke that duplicates your last entry, and so on. You can drag and drop; attach pictures, sounds, and movies; and change the font, size, and even color of nearly any text.

The separate but self-launching chart-making program instantly churns out any kind of genealogical chart. Configure charts in any orientation, complete with photos, with the option of dragging branches of your tree around before printing. (The Timeline chart, showing your clan members' life spans against a grid of history, is especially valuable.) The program doesn't offer automatic integration with Web data, but it can turn your family tree into gorgeous, hyperlinked Web pages, ready for posting online.

Most appealing is the way Reunion puts your data to work. It prints birthday calendars, marking days to remember or showing each relative's age. It even generates startling averages (such as "age at marriage" or life span) for your clan.

Macworld's Buying Advice

Family Tree Maker Deluxe Edition II and Ultimate Family Tree Deluxe may have PC fans, but those people never had to use these clumsy adaptations. Reunion 5, on the other hand, isn't just great genealogy software; it's an outstanding Mac program. Genealogy can be a rewarding lifelong quest; fast, flexible Reunion should be your companion.—DAVID POGUE

Family Tree Maker Deluxe Edition II 3.02

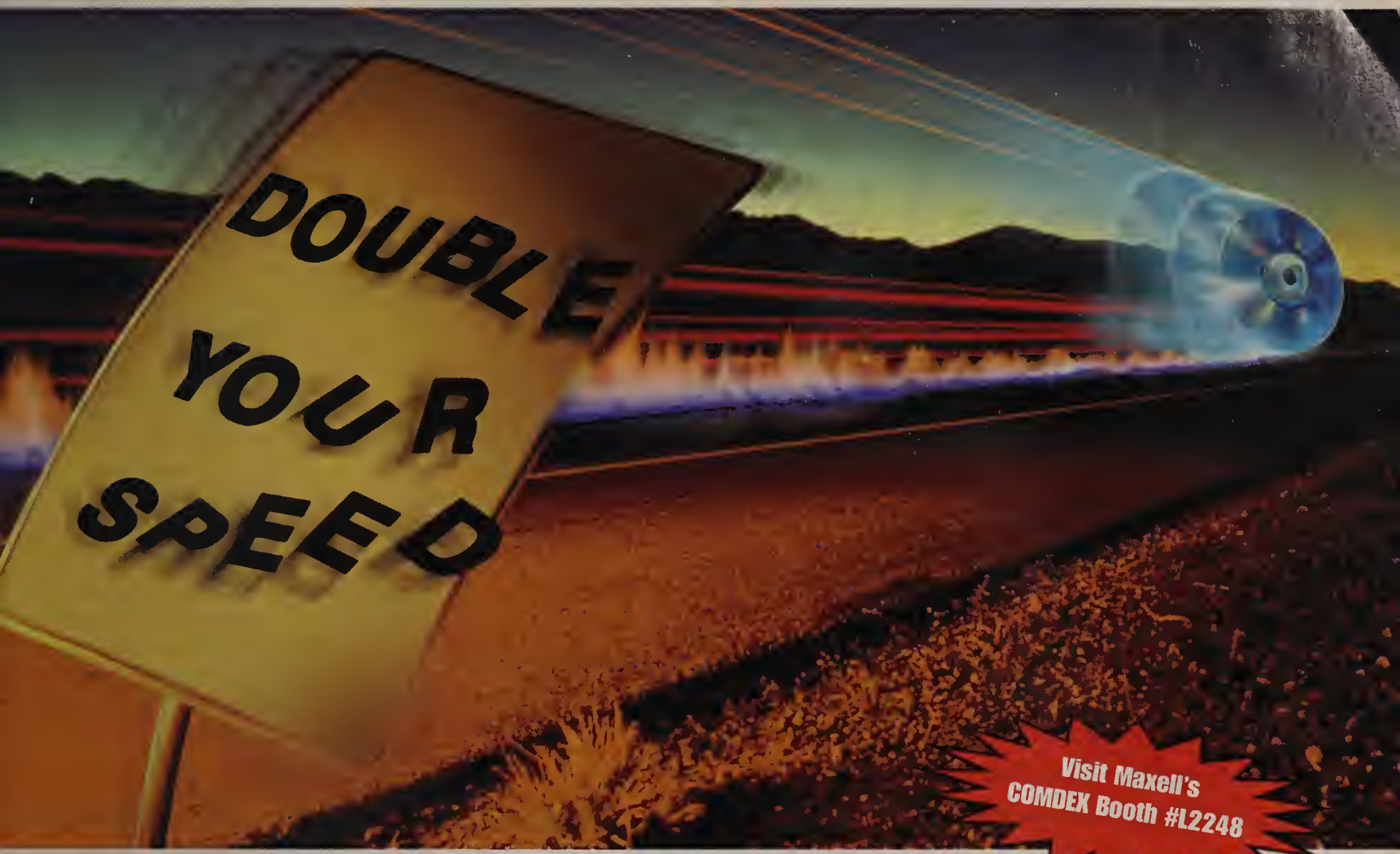
RATING: ★★/4.8 **PROS:** Well-stocked Web site may help with research. **CONS:** Appalling RAM, hard-disk, and extension demands; slow; too much sales pressure. **COMPANY:** Brøderbund (415/382-4700, www.familytreemaker.com). **COMPANY'S ESTIMATED PRICE:** $89.99.

Reunion 5.02

RATING: ★★★★/8.7 **PROS:** Beautifully designed; infinitely flexible; fast and stable. **CONS:** Chart maker is technically a separate program. **COMPANY:** Leister Productions (717/697-1378, www.leisterpro.com). **COMPANY'S ESTIMATED PRICE:** $99.95.

Ultimate Family Tree Deluxe

RATING: ★★/3.0 **PROS:** Integrates with Web site; useful interactive research-tips guide. **CONS:** Unusably slow; confusing, inconsistent interface; nested dialog boxes required for most functions. **COMPANY:** Palladium Interactive (812/829-4405, www.palladiumnet.com). **COMPANY'S ESTIMATED PRICE:** $59.95.



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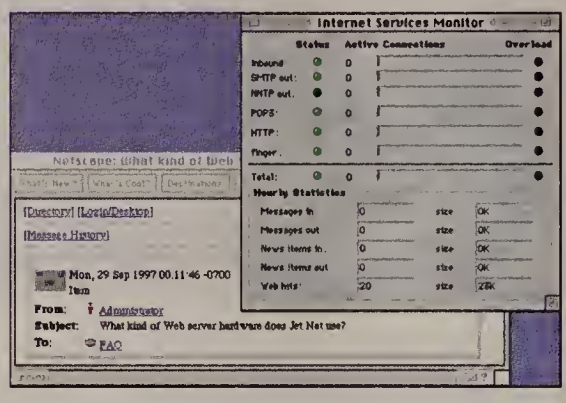
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FirstClass Intranet Server

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YOU'VE HEARD THE SIREN CALL of the intranet: "Dump those expensive proprietary client programs and serve up your enterprise data using cheap, plentiful Web browsers. On the Web you can do anything. Come closer!" Alas, many a corporate sailor has been capsized by expensive server software, complicated programming, and quirky user interfaces. SoftArc promises to smooth the waters with a special version of its venerable FirstClass messaging system, newly outfitted for intranet duty. But although First Class Intranet Server (FCIS) 1.0 retains the proprietary client functions and powerful features of the original FirstClass package (see *Reviews*, March 1997), it falls short of delivering on its promise to provide a complete intranet platform.



WebTalk FirstClass Intranet Server's built-in HTTP server software lets you publish traditional FirstClass conferences on the Web for public viewing.

FCIS's client sports a few enhancements, such as full MIME compatibility and threaded conferences, but the big news is the package's built-in SMTP, POP3, NNTP, and HTTP (Web) server features, which let you access FirstClass messages over the Internet using a standard Internet mail client or a Web browser. The servers run on either Macs or Windows-based machines and provide access to the FirstClass user directory via Internet Finger clients.

The FCIS SMTP and POP3 servers deliver e-mail to the Internet and to POP3 mail clients, respectively. The SMTP server supports Internet mail relaying, but the POP3 server has no advantages over any other POP3 server besides its integration with FCIS.

The NNTP server collects Usenet news from an upstream news feed and delivers it to users. Curiously, it provides no access to FirstClass conferences for NNTP clients (news readers). Minimal documentation for the news gateway makes setup difficult, and the server is unable to filter news, gather statistics, or otherwise manage Usenet message content.

FCIS's built-in Web server lets you publish documents and conferences simply by dragging them into FirstClass folders, but it has no facility for CGI scripting or other programming. Although the manual implies otherwise, in reality you can only *view* FirstClass content; you can't update directory entries, reply to mail messages, post messages to conferences, or upload files. The most significant enhancement to conferences—message threading—is mysteriously absent from Web-served conferences, as are other FirstClass features.

Although the Web server falls short as a true intranet platform, some users may find it useful for publishing content the general public can read. Unfortunately, the Web server's performance limits that public to a small audience indeed. Tests in which only ten simultaneous users access the server show that it bogs down easily, with response times of tens of seconds when the users are browsing conferences. Even when serving static HTML, the server drags with only two or three simultaneous users.

Macworld's Buying Advice

As a powerful enterprisewide messaging environment, FirstClass has no peer in the Macintosh world. Existing users will find the new Internet server features useful, and the POP3 and SMTP compatibility makes the product attractive for handling Internet e-mail. Just don't be fooled into thinking FirstClass Intranet Server has anything to do with real intranet information serving.—MEL BECKMAN

RATING: ★★★/6.5 **PROS:** Integrated POP3, SMTP, NNTP, and HTTP servers; MIME compatibility; cross-platform support. **CONS:** Can't update content via Web interface; slow Web-server software; weak documentation. **COMPANY:** SoftArc (905/415-7000, www.softarc.com). **LIST PRICE:** 10 users, $999; 50 users, $2,723.



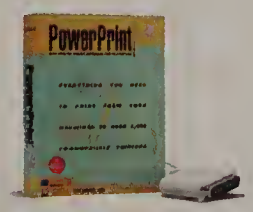
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Apple Network Administrator Toolkit 2.0

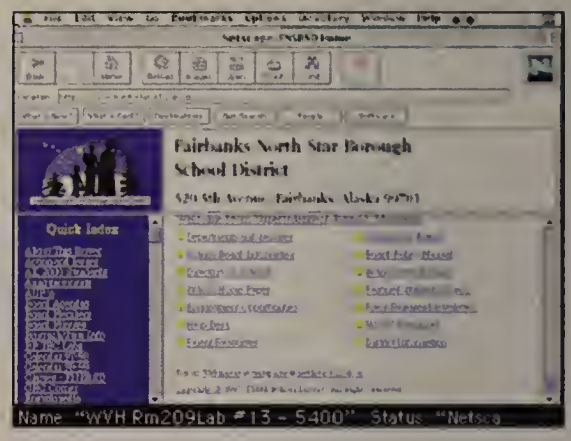
SUPERB EDUCATOR-ORIENTED SUITE

YOU DON'T NEED TO BE A WIREhead to appreciate the Apple Network Administrator Toolkit. In fact, ANAT has the most to offer to teachers, school administrators, and others who manage computer labs alongside their other jobs, by simplifying complex tasks, automating repetitive procedures, and adding powerful new features to the Mac OS's built-in networking software.

ANAT 2.0's three programs can be used together or separately. Network Assistant 3.0 allows remote management of Macs, AtEase for Workgroups 5.0 lets you create customized Mac client/server environments, and User and Group Manager 1.1 simplifies the process of managing groups on multiple machines.

Network Assistant lets administrators perform tasks on a group of Macs, from a single administration system. Because Network Assistant 3.0 supports TCP/IP, client and administration machines don't have to be on the same AppleTalk network; they can interact via the Internet. Some tasks (such as changing IP addresses or installing software) must be done one machine at a time, while others (such as copying files and rebuilding desktops) can be performed on multiple machines.

Network Assistant's latest version expands its tracking capabilities, but it isn't just for monitoring and controlling technical information. Teachers will appreciate the screen-sharing feature, which allows them to perform tasks such as darkening all the monitors in a student lab or making the monitors' screens mirror another system's. Administrators can also observe any number of screens on the network, with or without the knowledge of the person using the client machine. A new option allows eyeballs to be displayed on a client monitor when it's being observed (see "Eyes Only"). The new version allows screen sharing and observing over LocalTalk networks and 28.8-Kbps modems (in addition to Ethernet and faster dial-up links), but screens are slow to redraw via low-bandwidth connections.



Eyes Only Tiny eyeballs in the menu bar alert students that their instructor is watching their screens.

AtEase for Workgroups lets administrators customize the user interface and add security features on client machines. It works well with servers running AppleShare File Server version 4.2.1 or AppleShare IP 5.0. The new version proves dramatically easier to install and configure than previous versions.

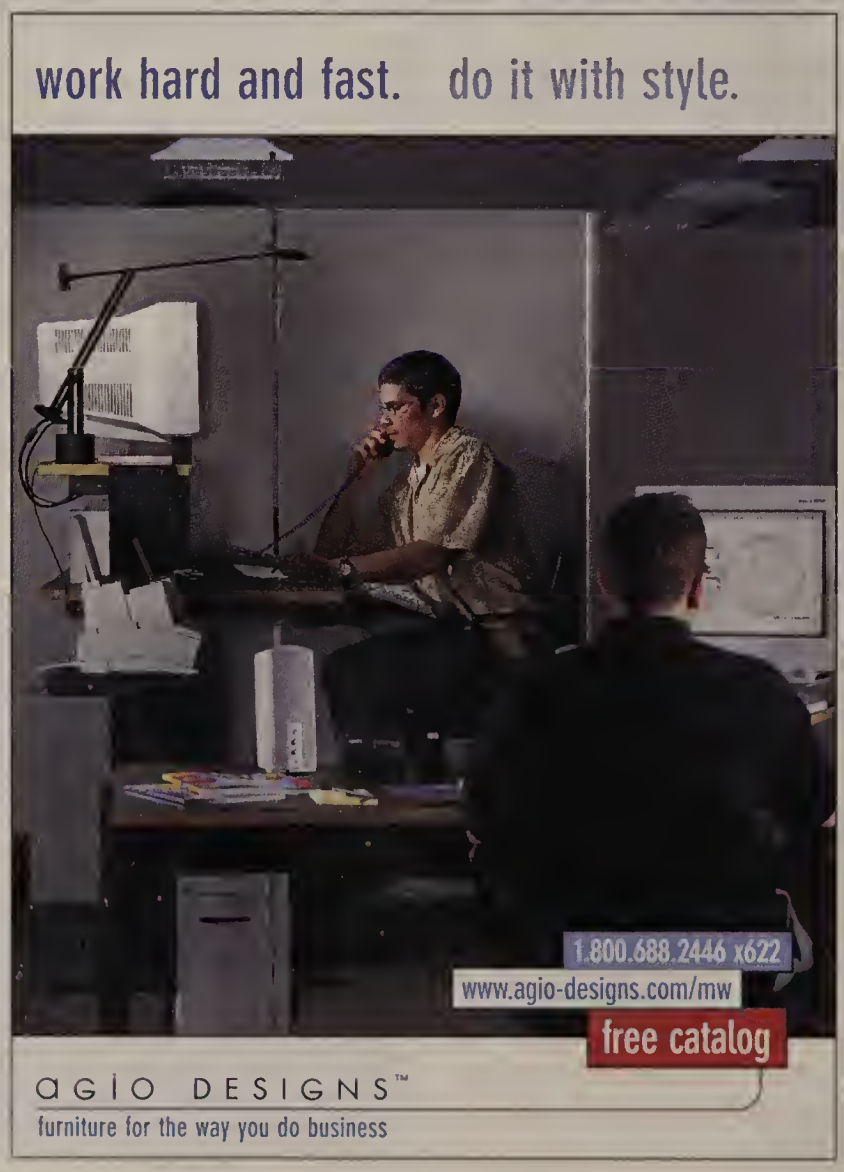
When students log in, they see environments chosen and customized by the administrator. The new version still doesn't provide client documentation for student use. AtEase 5.0 offers new options for automatically updating preferences within Internet applications (such as Netscape Navigator bookmarks) each time a user logs in to the network. Version 5 also works well with AppleShare IP 5.0 Web Server and Apple's eMate Server.

User and Group Manager 1.1 handles user and group creation for both AtEase and AppleShare server administration. It greatly simplifies group-management procedures across multiple servers.

Macworld's Buying Advice

Apple Network Administrator Toolkit 2.0 takes much of the repetition—and the risk—out of managing large networks. The new version lets you administer networks thousands of miles away via the Internet without a hitch. This suite is a must-have for most anyone who administers a Macintosh network in an educational environment.—GEORGE BEEKMAN & TODD SHECHTER

RATING: ★★★★/8.4 **PROS:** Straightforward installation; useful features; works on LANs and across the Internet. **CONS:** Lacks client documentation. **COMPANY:** Apple Computer (408/996-1010, www.apple.com). **LIST PRICE:** 10-client version, $400; upgrade, $200.



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SECOND LOOK

PrimeraPro Elite

PRINTER STILL FAILS TO MAKE THE GRADE

TWO MONTHS AGO, FARGO'S dye-sub/thermal-wax printer earned a tepid two-star rating. Due to testing irregularities, we agreed to give the PrimeraPro Elite another look. Unfortunately, we encountered so many additional problems in our retesting that we still can't recommend this product.

The original review complained about the printer's streaky output when imaging Macworld Lab's Adobe Illustrator test image (see *Reviews*, November 1997). Fargo representatives maintained that we had mistakenly used CMY ribbon with CMYK paper, and our retesting indicates that this was indeed the case, although minor streaking still occurred.

Our experience highlights a serious issue with the Elite's consumables: neither the ribbons nor the paper sports any means of distinguishing CMY from CMYK; our experienced lab analysts couldn't tell the difference. But with the correct supplies installed, the printer still displayed other serious problems—even after Fargo representatives visited Macworld Lab to ensure that our testing was sound.



Knowing Right from Wrong The PrimeraPro Elite's output (A) shows its inability to properly render the type in our complex FreeHand file (B).

Prints of our Adobe Photoshop test document were unacceptably oversaturated; primary colors in particular suffered from unpleasant, garish hues. Fargo maintains that the oversaturation is due to the fact that our test image is a CMYK file, and in fact, RGB Photo CD images we printed *were* noticeably superior. At this price, though, you shouldn't have to compromise.

In printing our Macromedia FreeHand test document, colored type appeared as white letters reversed out of striped colored boxes. Reinstalling the driver solved the type-reversing problem, but the letters' colors still failed to print properly (see "Knowing Right from Wrong").

Circular objects in the same file were rendered as many-sided polygons, and numerous graphic elements had noticeable white halos. Fargo representatives maintain that these issues—except for the type—are a problem with QuickDraw, even though spot-tests on competing ink-jet printers displayed none of the same quirks.

Fargo plans to introduce a $465 PostScript Level 2 software option by the time you read this. Although we have not tested this product, it stands to reason that it could solve many—if not all—of the problems we experienced with our FreeHand file.

Macworld's Buying Advice Unfortunately, the PrimeraPro Elite's print quality still falls below our basic expectations for a dye-sub printer. Quality issues aside, though, there are plenty of other reasons to look elsewhere. The consumables are confusing, and the Elite's price point is way out of line considering its level of performance.—SUZANNE COURTEAU

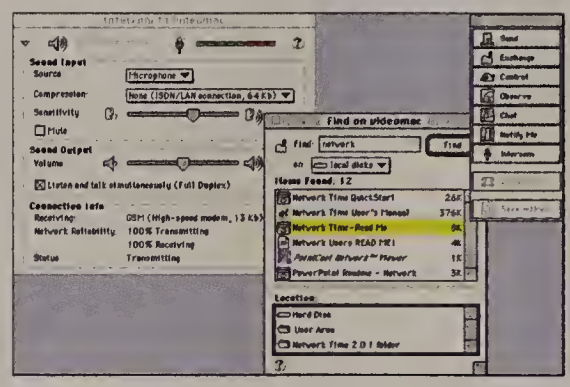
RATING: ★★/4.5 **PROS:** Full-bleed letter-size prints; inexpensive for dye-sub/thermal-wax combo; knowledgeable technical-support staff. **CONS:** Unacceptable dye-sub prints. **COMPANY:** Fargo Electronics (612/941-9470, www.fargo.com). **LIST PRICE:** $2,195.

Timbuktu Pro 4.0

BETTER THAN EVER FOR REMOTE ACCESS AND CONTROL

FARALLON'S TIMBUKTU HAS always been the next-best thing to being there, letting you reach out and touch a distant Mac over a LAN, the Internet, or a dial-up connection. It lets you share screens, exchange files and messages, and conduct text chats with any number of remote users simultaneously. And that was just the *old* version; the new version adds a multitude of nifty features and refinements.

Timbuktu Pro 4.0 is Open Transport–native, offering much faster file transfers and the ability to recover a dropped transfer where it left off—a real boon for modem users. The file-exchange function also features an array of new commands for navigating directly to folders and renaming and finding files. You can create a Drop Sender icon for a specific destination machine and then send files to that destination simply by dragging them onto the icon. A sophisticated new Intercom feature lets you talk to remote users via the Mac's built-in audio hardware, with voice compression for good performance even over slow modem connections. Timbuktu Pro 4.0 is also fully AppleScript- and UserLand Frontier–enabled and includes a slew of ready-made scripts for such chores as remote backup and folder synchronization.



Walk and Talk With Timbuktu Pro 4.0, you can walk through a remote system's files, using the Find File command, and you can use the Mac's built-in audio hardware to converse with remote users.

Timbuktu is a worthwhile tool for its file-transfer performance alone. On a 100BaseT network, Timbuktu moved data at a megabyte per second (about 50 percent faster than version 3.0); AppleShare IP took 3 seconds per megabyte to move the same files. Over a 128-Kbps ISDN connection, Timbuktu was five times as fast as AppleShare IP.

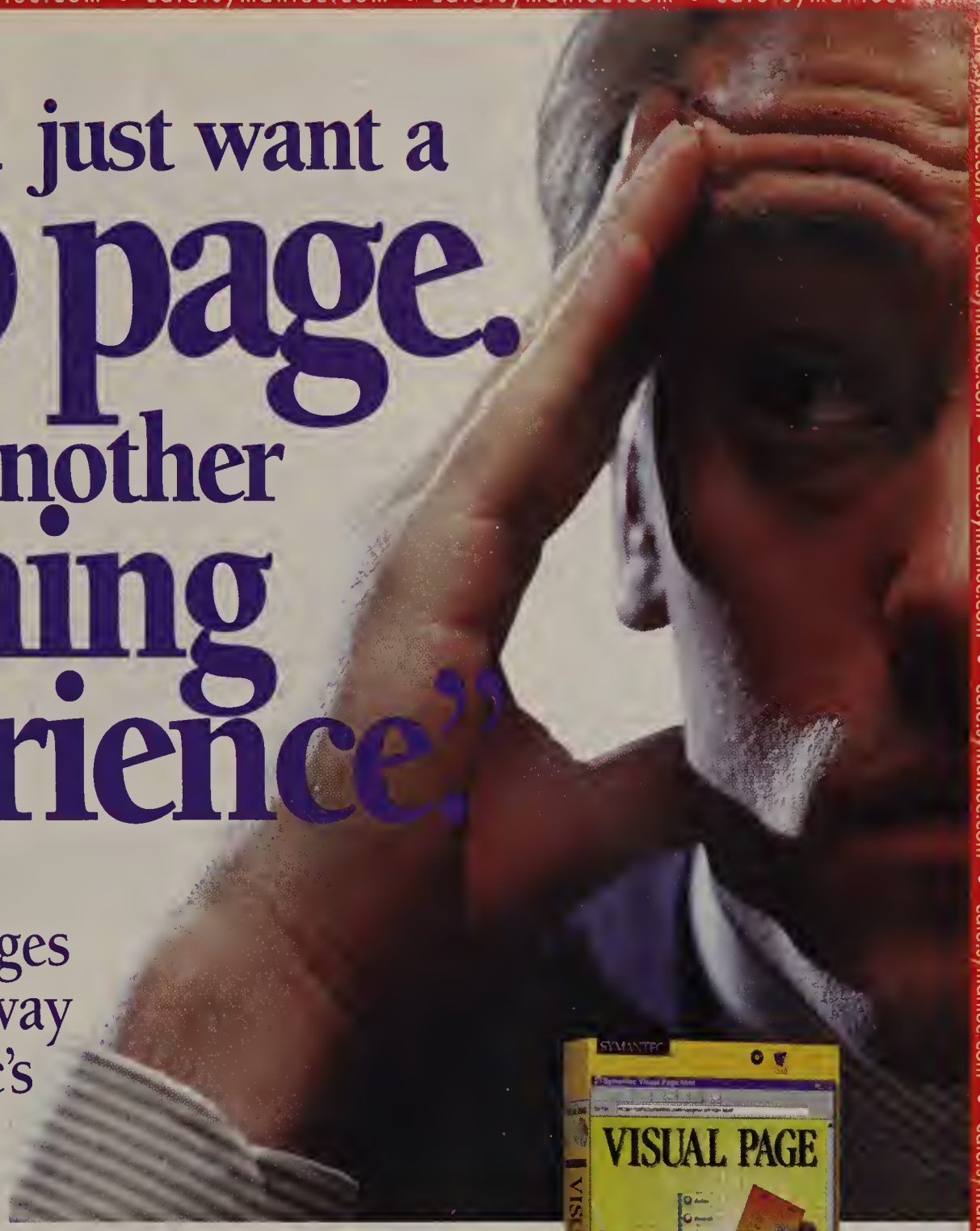
Timbuktu Pro 4.0 retains version 3.0's popular features (see *Reviews*, January 1997): pop-up messaging, remote-user–activity notification, drag-and-drop file transfers, and a Netscape plug-in for compatibility with Netopia Virtual Office. The only negative in this release is Farallon's failure to fix the awkward user-interface problems, such as the nonintuitive placement of some menu items and the difficulty in saving settings. While you can write AppleScripts to get around these problems, most users don't want to become programmers just to fix a few interface glitches.

Macworld's Buying Advice With a raft of new features, Timbuktu Pro 4.0 is better than ever for remote access and control. Its blazing file-transfer speed makes it indispensable for exchanging large files, such as video streams. And because it's cross-platform for network and dial-in access, it's sure to be the darling of enterprises that support both Mac OS and Windows desktop machines.—MEL BECKMAN

RATING: ★★★★/8.5 **PROS:** Sophisticated access for any remote user; fast file transfers; can resume file transfers after failure; remote-searching and intercom features. **CONS:** User interface still awkward. **COMPANY:** Farallon Communications (510/814-5000, www.farallon.com). **LIST PRICE:** One user, $199; two users, $259; ten users, $899.

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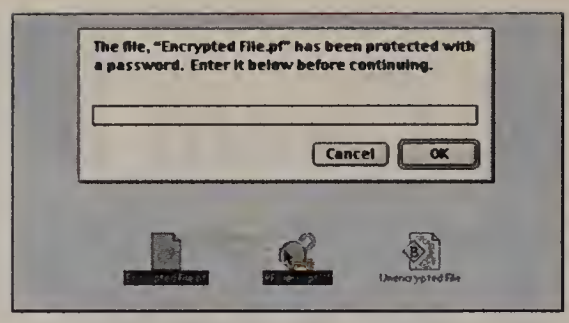
Private File 2.0

ADEQUATE, SIMPLE ENCRYPTION

AS MORE PEOPLE COME TO RELY on the Internet for sending and receiving information, encryption software—utilities that protect valuable data from prying eyes en route—has moved from the realm of the esoteric into the mainstream. Aladdin Systems' Private File 2.0 provides a simple but effective way for people to encrypt files that travel over public networks.

Private File consists of a pair of applications for encryption and decryption. Operation of either component is easy. To encrypt your files, just select them and drag them onto Private File. You're presented with a dialog box in which you enter the password or phrase used to secure the data. The encryption utility first compresses the files and then encrypts the resulting archive.

Decrypting a Private File archive is an even simpler matter of either double-clicking on encrypted files or dragging them onto the decryption application. Upon opening the archive, Private File asks you for the password, and—after a brief wait as they're decrypted and decompressed—the files are deposited on your hard disk.



Simply Secure To encrypt or decrypt a file, just drag it onto the appropriate Private File component and enter a password.

Private File 2.0 ships on a hybrid CD-ROM containing both Mac OS and Windows versions of the software. Files encrypted on one platform can be decrypted on the other; the software can even automatically convert line breaks in text files if desired.

Because of current U.S. government regulations on encryption software, Private File is available in two versions: an export version that uses relatively insecure keys that are 40-bits long and a domestic version that uses much stronger, 128-bit keys. Although the domestic version cannot create 40-bit encrypted files, the decryption utility that comes with both the domestic and the imported versions can handle 40- and 128-bit files.

Private File also lacks the ability to save its files in a self-extracting format (similar to StuffIt's convenient **.sea** archive scheme), in which a minimal decompression engine is attached to the compressed file. This type of capability, or a freely distributable decryption component, would make Private File much more useful.

As shipped, Private File's Finder-integration features work only under System 7. Aladdin representatives said that a free patch to version 2.0.1—which provides full Mac OS 8 feature compatibility—should be available by the time you read this.

Macworld's Buying Advice Although the simplicity of Private File is perfectly suitable for encryption neophytes, a more capable package, such as PGP for Personal Privacy 5.0, from Pretty Good Privacy (650/572-0430, www.pgp.com), will better serve most users' security needs in the long run. PGP—the de facto multiplatform standard—offers a stronger feature set, seamless integration with popular e-mail packages, and a much better value.—STEPHAN SOMOGYI

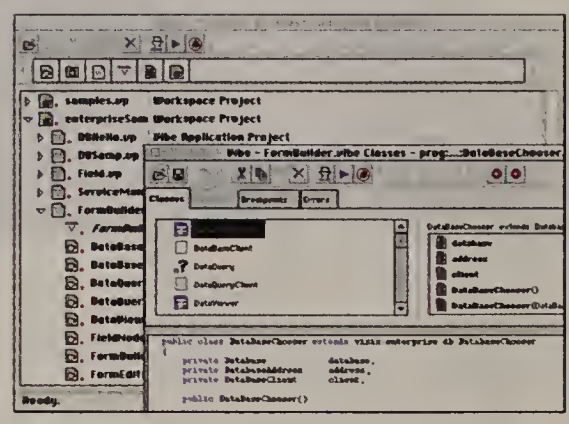
RATING: ★★★/5.2 **PROS:** Drag-and-drop simplicity; transparent cross-platform use. **CONS:** Limited feature set; no self-extraction capability; no OS 8 Finder integration. **COMPANY:** Aladdin Systems (408/761-6200, www.aladdinsys.com). **LIST PRICE:** Two-user license, $99.95.

Vibe Enterprise

HIGH-END JAVA TOOLS FOR BUSINESS

FOR ALL ITS POTENTIAL, JAVA has some serious shortcomings from Mac developers' perspective. One is the sometimes months-long delay in the availability of Mac versions of the latest tools (JavaSoft's JDK 1.1 is a notable example); another is the platform-specific appearance glitches that typically bother Java applications. Visix Software's Java development environment, Vibe Enterprise 1.0.1, addresses these problems, along with the absence of Java in large-scale business solutions. The Mac and Windows (95 and NT) releases were nearly simultaneous, the application interface is native to each platform, and this version was designed specifically as an enterprise-scale toolkit.

The initial release of Vibe was a $49.95 cross-platform development tool for C++ programmers moving to Java. The much higher price of Vibe Enterprise reflects the addition of libraries and sample Java code for designing stand-alone databases and providing client access to Oracle and Sybase databases. Currently, its only competition is Symantec's recently announced $495 Visual Cafe for Java Database Development,



Class Act The feature that distinguishes Vibe Enterprise is a large library of classes for accessing and querying popular big-business databases.

which also promises links to Oracle, Sybase, and ODBC-compatible databases.

Like the more familiar Metrowerks, Roaster, and Symantec environments, Vibe has a fast text editor and a graphics-oriented dialog editor. It includes a fairly complete debugger—which unfortunately lacks conditional breakpoints—along with a browser for examining the megabytes of classes for basic Java and its more advanced database uses. Although Vibe's modify-and-rebuild cycle seems a bit slower than Metrowerks', the Java applications themselves are impressively fast; as stand-alone applications, they run at near-C++ speeds. And although Vibe's libraries are proprietary, the tutorial offers plenty of entry-level material to copy and paste.

Professionals will appreciate the ease of designing complex database applications with Vibe's powerful, hierarchical Service Broker (which manages multiple database connections) and slick, interactive SQL query builder. Another clue that Vibe is for professionals only is that it's still under construction: In Visix's own examples, for instance, scrolling text sometimes overwrites itself. Visix is conscientious about tracking, documenting, and fixing bugs, but the coming support for JDK 1.1 will likely only add to the list.

Macworld's Buying Advice Vibe Enterprise is an excellent tool for Java professionals doing database work for medium-size to large businesses. At its current price and state of development, it's not simple enough for beginners, but it's great for designing Web access to corporate Sybase or Oracle databases.—CHARLES SEITER

RATING: ★★★★/7.2 **PROS:** Powerful classes for serious database work; finished applications run quickly. **CONS:** Leisurely performance; generous, though well-documented, assortment of bugs. **COMPANY:** Visix Software (703/758-8230, www.visix.com). **LIST PRICE:** $1,995.

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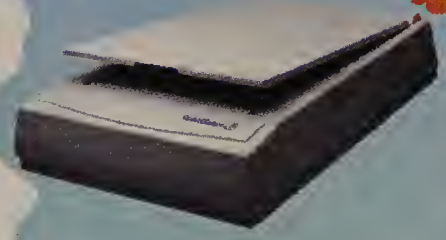
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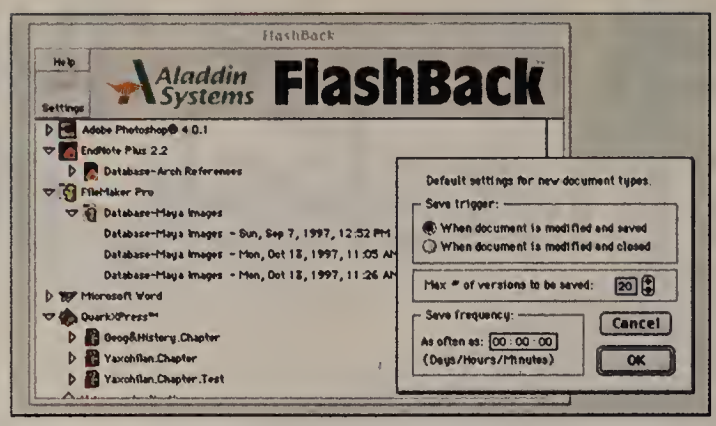
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FlashBack

FILE UTILITY TRACKS AND RESTORES PREVIOUS VERSIONS

THOREAU WROTE "SIMPLIFY, SIMplify," and for better or worse, Aladdin Systems has taken his famous maxim to heart in designing its latest utility. FlashBack 1.0, which remembers and restores previous versions of any file, is as lean and uncomplicated as it gets—so much so, in fact, that using FlashBack is actually more work than it should be.



Déjà Vu All Over Again FlashBack's Finder-like window lists the files it's tracking by application and the versions of each file it contains by date and time.

The premise is straightforward: You tell FlashBack which files to monitor, and it runs in the background and records the contents of and changes to successive versions of each file (up to the number of versions you specify) every time the file is saved, every time you close the file, or at user-defined intervals. You can set those options for all files, for all the files of a specific application, or for individual files.

The FlashBack window (see "Déjà Vu All Over Again") lists every version of all the files being tracked. If you need to open a previous version—to undo changes you can't otherwise undo, to restore something edited out way back when, or to recover a lost or damaged file—you either double-click on the appropriate item in FlashBack's window or drag the item into the Finder. FlashBack then re-creates the file as it existed at the specified time.

In its extreme simplicity, however, FlashBack is needlessly inefficient. For example, dragging and dropping individual files or groups of files into the FlashBack window is the only option for specifying files to be tracked—an unwieldy one if your files are organized in many nested folders. FlashBack has no command for automatically tracking all newly created files or all the files of a specific application or in a particular folder. (In fact, it has no meaningful commands at all.) And the FlashBack window doesn't let you organize an unmanageable number of documents into folders. In addition, even though FlashBack uses a difference engine to record version changes, the program takes up multimegabytes of hard-disk space when asked to track large graphics files.

Macworld's Buying Advice By running in the background as a separate application, FlashBack avoids the problems system extensions sometimes cause (at the expense of about 650K of RAM, however). And for those who need Undo and Revert options that are more comprehensive than what their applications provide, FlashBack may fill the bill. But until the program becomes more flexible and is able to track user-defined categories of files automatically, the rest of us may find it almost as easy to back up our edits the usual way.—ROBERT C. ECKHARDT

RATING: ★★★/6.0 **PROS:** No-hands background backups of earlier versions of files. **CONS:** Inflexible operation; lacks automatic tracking options. **COMPANY:** Aladdin Systems (408/761-6200, www.aladdinsys.com). **LIST PRICE:** $69.95.

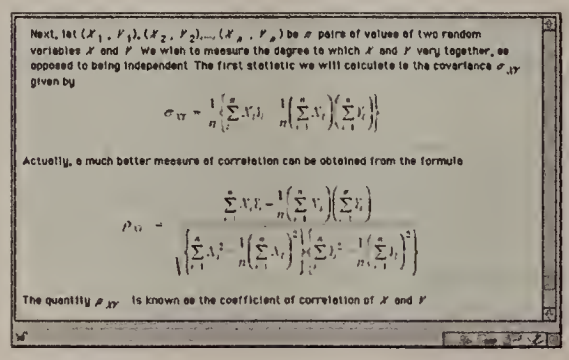
MathType 3.5

MATH PUBLISHING, NOW WEB-READY

MOST MAC USERS ALREADY HAVE a bit of Design Science's MathType on their hard disks—a smaller version masquerades as the Equation Editor found in popular word-processing programs, such as Microsoft Word. The complete version of MathType sports the same simple interface: Palettes with common math symbols let you assemble equations rapidly.

Version 3.5 offers enhancements that range from merely convenient to downright essential. MathType now installs its own tool-bar button and commands in Word and lets you customize palettes and store macros for rewriting complex expressions. Like previous versions, MathType automatically handles finicky spacing and symbol-sizing details for perfect printed output.

An essential new command lets you save equations as antialiased GIFs (see "Math for the Web") that yield online math pages that look sharp and identical on all platforms. MathType also produces HTML code for any equation saved as a GIF, but the limitations of HTML make the GIF format aesthetically superior. Teachers will welcome a new set of features for reproducing classic textbook geometry notation.



Math for the Web Version 3.5 brings MathType's excellent printed-page output to Web documents.

Although Wolfram's Mathematica 3.0 (see *Reviews*, May 1997) uses a set of symbol templates similar to MathType's and creates "live" equations (rather than static images), MathType retains some key document-production advantages over its competitors. First, because MathType doesn't carry the symbol-interpreting overhead of Mathematica, laying out a few pages in MathType is dramatically faster. Also, because MathType limits its prowess to simple equation production, the program fits on a single floppy and runs well on any Mac. As you would expect, this version also offers technical-publishing–standard TEX output.

Unfortunately, MathType's orientation toward carefully defined output appearance comes at the expense of interoperability with straight-ahead math programs such as Mathematica or Maple V, from Waterloo Maple (see *Reviews*, November 1996). It would be a great convenience to be able to use MathType equations as input to Mathematica or Maple, instead of having to leave the equations as static pictures. In its current marketplace—where MathType is used mostly as a word-processing aid for generating exams, quizzes, and reports—this isn't a crucial defect. Design Science should consider writing a utility that translates the program's output into input for key programs.

Macworld's Buying Advice Equation-writing occurs more often in an instructional context than in any other, and MathType is ideally suited for the production of academic documents. As an upgrade to the ubiquitous Equation Editor in Microsoft Word and ClarisWorks, it quickly pays for itself in time saved.—CHARLES SEITER

RATING: ★★★★/8.6 **PROS:** Easy to use; no cross-platform glitches; fast; compact. **CONS:** Equations don't serve as "live" input for other math programs. **COMPANY:** Design Science (562/433-0685, www.mathtype.com). **LIST PRICE:** $199 (upgrade, $29; upgrade from MS Word Equation Editor, $89).

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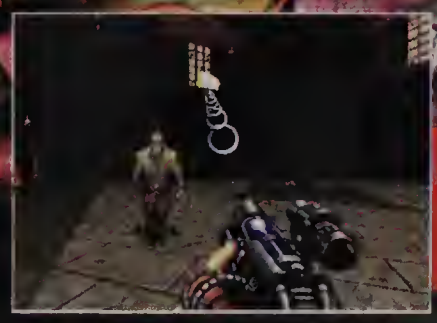
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Internet Station

SLOW, PRICEY INTERNET LAN ACCESS

DESIGNED TO ALLOW SHARED modem or ISDN Internet access, Dayna's new Ethernet TCP/IP router promises to get network users onto the Internet quickly and easily. The NetCenter Internet Station 1.0 lives up to that promise, but at a higher price and slower speed than a dedicated ISDN router.

The Internet Station is a modem-size box with an Ethernet connection and three communications ports—one serial port and two PC Card slots—for either analog modems (up to 56 Kbps) or an ISDN terminal adapter (TA). You can connect a mix of Mac, Windows, Unix, and other systems using Dynamic Host Control Protocol; the Internet Station automatically sets the IP address and other TCP/IP values on every machine. Web-based configuration and an excellent online guide let you set up the router in a matter of minutes.

The Internet Station senses outbound Internet traffic and automatically dials your ISP, disconnecting after a period of inactivity. To the ISP, your entire network looks like a single dial-up user. Indicator lights show network activity and modem status, while the Web interface provides detailed error messages and other diagnostic aids. But despite its ease of use, the Internet Station may be problematic for Internet access. The product lacks remote-administration capabilities, making it difficult for ISPs to support. Although the Web-based setup is handy, most ISPs offer free router configuration services anyway.

The Internet Station also supports modem sharing for Windows computers, letting network users send faxes and access modem-based services, using two of the three modems while the third is connected to the Internet. Considering that other modem-sharing solutions cost $1,000 or more, this useful feature could easily justify the price of the product. Alas, because Dayna supplies no Mac modem-sharing software, Mac users can take advantage of only one of the unit's three ports.

The unit's performance is lackluster with multiple users connected over a 56-Kbps modem; modems are just too slow to share effectively. Replacing the modem with an ISDN TA yielded a throughput of 100 Kbps and acceptable response time with a half-dozen users. However, a dedicated ISDN router costs less than the Internet Station plus an ISDN adapter, and you get better performance into the bargain—the dedicated router offers 128-Kbps synchronous throughput and data compression.



ARNOLD TIOSEJO

Macworld's Buying Advice Most users will likely find any modem connection too slow for shared Net access. Unfortunately, an Internet Station plus an ISDN TA—the only solution for acceptable speed—costs more than a dedicated ISDN router and is much slower. The modem-sharing feature could have cinched the deal for Mac users looking for an all-purpose communications device, but as it stands, this one-trick pony just isn't very attractive.—MEL BECKMAN

RATING: ★★/4.8 **PROS:** Simple Web-based configuration; allows unlimited users on a single Internet account; supports ISDN. **CONS:** Expensive; too slow with a modem; modem sharing nonfunctional; no remote administration. **COMPANY:** Dayna Communications (801/269-7200, www.dayna.com). **LIST PRICE:** $659.



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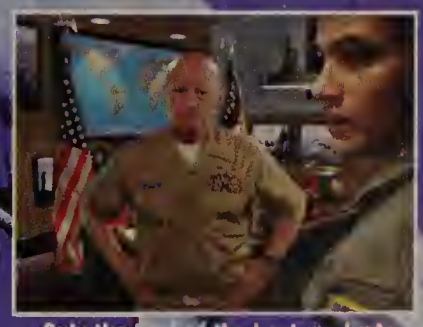
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Power3D

3-D-ACCELERATION CARD FOR GAMES

JUST A YEAR AGO, HARDWARE-based 3-D acceleration promised to be the Next Big Thing for Mac gamers, and ATI delivered with its Xclaim VR card. For gamers, the latest—and greatest—PCI-based solution is TechWorks' Power3D acceleration card.

But just for gamers. Unlike the ATI card, the Power3D's sole purpose is to accelerate the sort of 3-D graphics used in games—2-D graphics continue to be delivered by your Mac's on-board video. Because the Power3D can't display 2-D and 3-D video concurrently, it's not intended for use with design applications.

The Power3D's external pass-through cable routes the Mac's video output through the Power3D card. When an application supporting the Power3D launches, 2-D video bows out and the Power3D's 3Dfx Voodoo Graphics chip set—the de facto standard for PC-game acceleration—takes over. This bodes well for Mac entertainment enthusiasts: Nearly every PC game that supports hardware-based 3-D acceleration now comes in a 3Dfx-compatible version; those games ported to the Mac will most likely sport 3Dfx versions as well. Conversely, not all of these games will be compatible with the 3D Rave protocol used by ATI and Apple—Bungie's upcoming Myth: The Fallen Lords, for example, supports only 3Dfx-accelerated graphics.



Before and After Power3D gives Quake the subtle shadows and textures shown on the right, compared with the pixelated graphics generated by standard equipment on the left.

The result of the Power3D's acceleration is nothing short of spectacular. Myth, Quake, and MechWarrior 2 are drop-dead gorgeous when played with the Power3D installed. Previously pixelated textures are smoothed, water undulates, smoke and haze take on transparency, and shadows become far more realistic. What's more, the card delivers all this at high frame rates. On a Power Computing PowerTower 180e, the Power3D running the 3Dfx version of Quake attained 28.2 fps at full-screen, 640-by-480-pixel resolution, compared to 9.7 fps produced by the ATI Xclaim VR running the 3D Rave version of the game.

The Power3D comes bundled with full versions of Bungie's Weekend Warrior, Activision's MechWarrior 2, and VR Sports's VR Soccer; episode 1 of Quake is also included. The only thing missing from the Power3D box is the 32MB of RAM you're going to need.

Alas, the Power3D isn't compatible with many non-multisync monitors. The card has a locked, 60MHz refresh rate, and if your fixed-rate monitor can't adjust to this rate, you're out of luck. TechWorks claims to be working on this problem.

Macworld's Buying Advice Although the Power3D is a one-trick pony, the trick it performs—3-D acceleration for games—is done extremely well. If you're serious about 3-D gaming on the Mac, this is the card to have.—CHRISTOPHER BREEN

RATING: ★★★★/8.2 **PROS:** Produces beautifully rendered 3-D images; increases frame rate; good game bundle. **CONS:** Stiff RAM requirement; incompatible with many non-multisync monitors. **COMPANY:** TechWorks (512/794-8533, www.techworks.com). **LIST PRICE:** $249.95.

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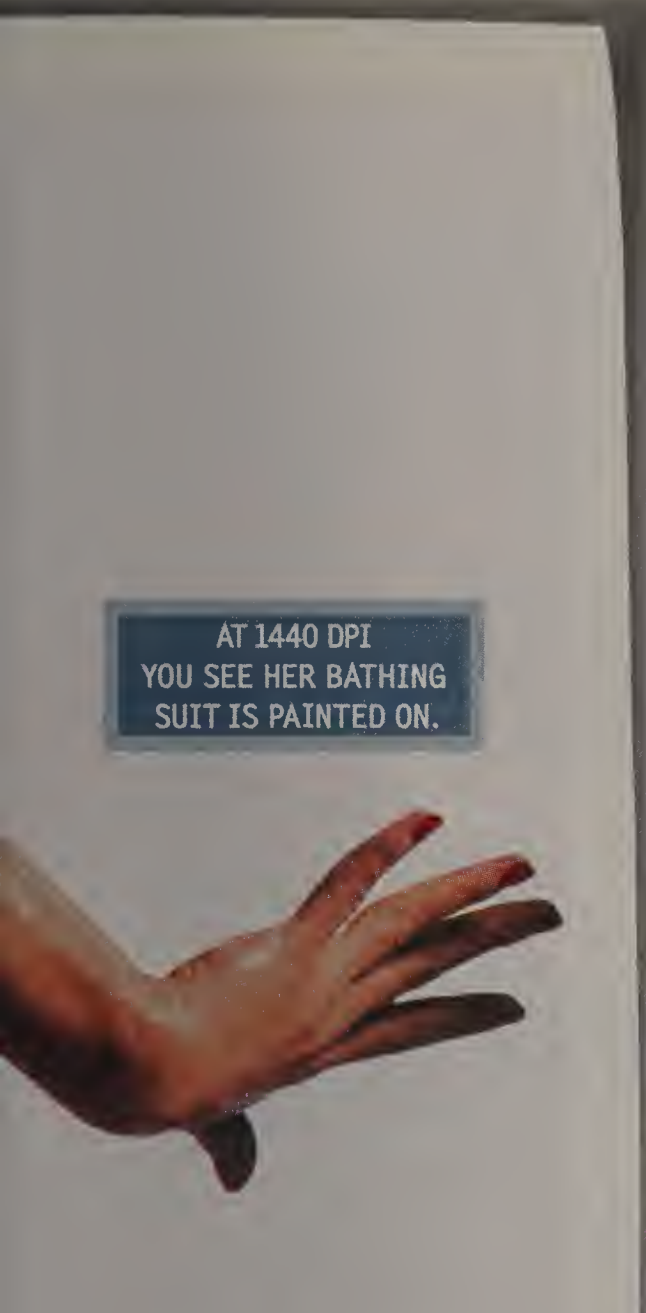
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New Performance Champs Apple's newest Macs—the Power Mac G3 266 tower, the Power Mac G3 233 desktop, and the PowerBook G3 250 notebook—bring both speed and value to the Mac community.

Macworld LAB TEST

Apple's Next-Generation Systems

PowerPC 750 Debuts at an Amazing Price

IF YOU THOUGHT THE DAYS OF LOW-COST, fast Macs died when Apple Computer killed off licensing of the Mac OS, think again. Apple has picked up the torch and is moving forward with a new architecture that drops fast Macs into the low-cost market. In fact, Apple's new Macs are so affordable that they are only a few hundred dollars more than Apple's budget Power Mac 6500/250, which offers half the speed of the new systems. Coming from Apple, such high performance with such a low price tag is simply amazing.

The new Power Mac G3 series is Apple's latest response to users' constant requests for affordable Macs. In fact, these bargain Macs are the first sign that Apple is trying to deliver on its overdue vow of inexpensive top performers.

by Allyson Bates

PHOTOGRAPHS BY KEVIN CANDLAND

Starting as low as $1,999, the Power Mac G3s promise high performance with economical upgrade options. This translates into Macs with quick system buses, low-cost upgrades, faster hard drives, and overall increased performance. And if *Macworld*'s first look at Apple's Power Macintosh G3 line is any indication, there are some great deals to be had. Apple expects to have the final systems available by the time you read this; we looked at prototype units.

How did Apple answer our prayers for low-cost, fast Macs? It streamlined manufacturing to cut in-house costs by standardizing on one motherboard design for all three Power Mac G3 models and creating *personality cards* for specific models. These cards contain multiple functions that would otherwise have to be on the motherboard, which would result in different motherboards for different models.

In a welcome change of pace for Apple's systems, the prices for the new Power Macintosh G3s come close to those of the competitive PC market. A comparably configured, MMX Pentium–based Dell Optiplex GN+ 233 PC costs $2,182 (including a 15-inch monitor), compared to a 233MHz Power Mac G3 with monitor's $2,350 price—and we expect the Power Mac G3 line to perform noticeably better than MMX Pentium–based PCs at the same megahertz rating.

Still, PCs are only getting cheaper: At press

time, NEC Technologies announced a 300MHz Pentium II–based system, the Direction SPL3000, for $2,298, including a monitor and a Zip drive. A comparably equipped Power Mac G3 266 tower will cost about $3,500 and likely will be no faster than the NEC system.

Limited Configurations

Apple plans to have only three Power Mac G3 configurations at release. Apple will offer two desktop models and one tower configuration—a $1,999 233MHz desktop, a $2,399 266MHz desktop, and a $2,999 266MHz tower.

All systems use the new PowerPC 750 (widely known by its code name, G3) and sport a 512K secondary cache, a 66MHz system bus (old news in the PC market), 32MB of RAM (using the fast synchronous dynamic RAM, or SDRAM, that PCs started using last year), and 2MB (upgradable only to 6MB) of video RAM.

The 266MHz tower features a larger, 6GB IDE hard drive (instead of the 4GB desktop version) and more AV capabilities, including video in/out and a DAV (Digital Audio Video) connector. Apple introduced the DAV connector in the Quadra 840AV five years ago, but this attempt to create a special-purpose bus for motion video has not resulted in any appreciable number of DAV products, even though Apple has kept the DAV technology in various Power Mac lines.

Don't be too disappointed if you expected to see faster-megahertz systems from this product line. It's likely that we'll see even speedier CPUs in the future, since Mac licensees Power Computing and Motorola Computer Group announced 266MHz, 275MHz, and 300-MHz 750-based systems in August, which they canceled when Apple killed licensing of the Mac OS.

And while you may be pleased that these initial systems are much cheaper than the projected prices for the defunct 750-based clone Macs, you shouldn't expect the same accelerated performance or cross-platform compatibility (such as support for PC peripherals using parallel and PS/2 connectors) that the killed systems would have offered.

Pushing the Limits

When we put these speed demons to the test, Macworld Lab got some interesting results. The 266MHz tower ranked the highest of all three configurations, with a mighty 4.5 SpeedMark score—higher than that of the much more expensive 350MHz Power Mac 9600/350, which uses the PowerPC 604e. (The 9600/350 is in such short supply that Apple has stopped taking orders for it. Only a few systems had been sold.)

The 9600 models do have more memory slots and PCI slots, but whether that's worth a $2,000 price difference remains to be seen.

Where the Speed Comes From

Apple improved several components to get the high speed from its new mainstay Mac models.

Faster System Bus Shortened bus lengths on the smaller motherboard let Apple increase the system bus speed from 50MHz to 66MHz, since there's less possibility of signal degradation. A faster bus means that all components are communicating with one another more quickly.

Backside Cache The PowerPC 750 uses a different caching scheme than previous PowerPCs do. It has a special bus that connects the cache directly to the CPU (this scheme is called a backside cache), rather than going through the system bus, so data can move more quickly between the CPU and the cache. Plus, the connection between the cache bus and the PowerPC 750 runs at twice the speed of the system bus (a 2:1 ratio). That means a 133MHz connection for the 266MHz Power Mac G3s and 117MHz for the 233MHz model. Compare those with the 40MHz to 50MHz connections in previous Apple Macs.

Current Power Mac models are configured with a 512K backside cache, but Apple is considering bundling 1MB and possibly increasing the backside cache to a 1:1 ratio, which would have the cache bus run at the PowerPC 750's full 266MHz. Both techniques would significantly boost speed over the present 512K configuration. For more details on backside-cache technology, see "275MHz Mac Powerhouse," September 1997, and "Upstart Macs," October 1997.

Memory Controller In addition, Apple has programmed the memory controller/PCI bridge, which traditionally accesses only one function at a time, to take on multiple tasks. Therefore, instead of only being able to send single commands to the backside cache, the memory controller can now dictate one function while performing other duties.

A More Upgradable Mac

Apple's new motherboard design, as well as some other design decisions, make the Power Mac G3 series one of the most easily upgraded Mac series Apple has ever offered.

Easier Access The motherboard's compact design (see the sidebar "Inside Apple's New Motherboard")—based on the PC-standard size known as ATX—let Apple move the hard drive in the desktop models, freeing up an extra drive bay (there are now two, versus the 7300's one). And the board's clean design allows easy memory and PCI-card upgrades. The tower's chassis, now more accessible to users, imitates the popular case design of the Power Mac 8600. Easy-to-locate green levers and handles make it simple to maneuver around in the clean interior.

Removable CPU Located near the bottom of the motherboard, the removable 233MHz or 266MHz CPU (a first from Apple) fits tightly into a PC-style ZIF (zero insertion force) socket, a convenient maintenance feature that will also allow CPU upgrades if faster CPUs become available. (Umax Computer already uses this approach in its SuperMac systems.)

Personality Cards One of Apple's

New G3 Macs Call into Question the Value of 9600 and 6500 Models

	Company's Estimated Price	Speed-Mark*	CPU TYPE 750	604e	603e	CPU Speed	C
Power Macintosh 9600/300	$3,799	4.3		●		300MHz	5
▶Power Macintosh G3 266MHz tower prototype	$2,999	4.5	●			266MHz	5
Power Macintosh 6500/300	$2,999	2.5			●	300MHz	5
Power Macintosh 6500/275	$2,499**	2.4			●	275MHz	5
▶Power Macintosh G3 266MHz desktop prototype	$2,399	NA	●			266MHz	5
▶Power Macintosh G3 233MHz desktop prototype	$1,999	4.0	●			233MHz	5
Power Macintosh 6500/250	$1,999	2.2			●	250MHz	2

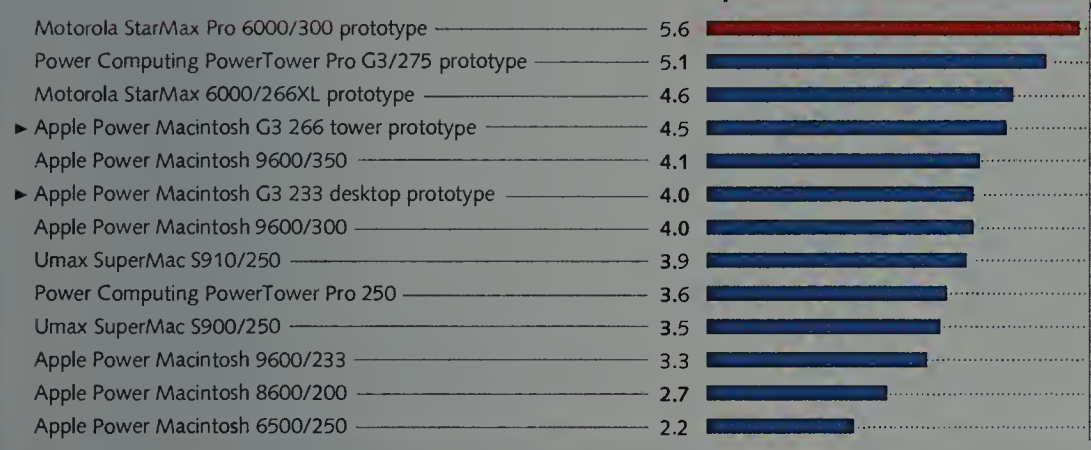
*NA = not available. ▶ Indicates new system. *Macworld Lab's SpeedMark test compares different systems' real-world application perform*

Macworld LAB TEST

New Power Mac G3 Series Offers Solid Speed Boost

The new Power Mac G3 systems, when they ship in November, will bring top-level performance at midlevel prices. The new systems cost about $2,000 less than the faster PowerPC 750–based systems that Motorola and Power Computing had planned to ship but canceled when Apple rescinded Mac OS licensing. The new Apple systems match existing Apple models that cost much more, such as the 9600 series, and they vastly outperform comparably priced entry-level systems such as the Power Mac 6500/250. These new systems show that Apple has heard the price message and has gotten much of the performance message. Note that Apple was unable to provide a prototype 266MHz Power Mac G3 desktop system for testing.

Best overall performance. Longer bars are better. Bold indicates best results in a specific test. ►New system. An Apple Power Macintosh 7100/80 has a SpeedMark score of 1.0.



CPU	FPU	Disk	Video	Star Rating
6.2	**5.4**	**3.9**	**9.8**	canceled
5.9	5.2	2.8	9.4	canceled
4.9	4.7	3.4	8.5	canceled
5.0	4.2	3.0	6.9	not shipping
4.5	4.7	2.5	7.4	not shipping
4.5	4.1	2.7	6.5	not shipping
4.3	4.3	2.5	7.4	★★★/6.9
3.9	3.9	3.5	7.8	★★★/6.4
3.9	3.8	2.5	7.6	★★★★/7.1
3.8	3.7	2.5	7.3	★★★/6.7
3.5	3.4	2.3	6.9	★★★/6.6
3.0	2.9	1.9	3.6	★★★/6.3
2.3	2.1	1.8	3.1	★★★/6.0

Behind Our Tests The Apple G3 systems were running Mac OS 8. All other systems were running System 7.6.1.—Macworld Lab testing supervised by Jeffy Milstead

most innovative but frustrating ideas for the G3 line is the use of personality cards. Combining similar functions onto one riser card was one of several suggestions *Macworld* made to Apple that have found their way into these newest systems—a 66MHz bus, SDRAM, and an integrated CPU and cache card were three others; see "The Mac Reborn," September 1996.

In that article, we proposed combining communications features (modem, Ethernet, and ISDN) on one card. Now, over a year later, Apple has taken the idea one step further by grouping 16-bit stereo in/out and a K56flex 56-Kbps modem on a single personality card that latches into the new, proprietary personality connector. This card is standard on the two desktop Power Mac G3s. (Apple expects a software upgrade this spring that will update the modem's proprietary K56flex protocol into the final public 56-Kbps protocol now being developed.)

In the 266MHz Power Mac G3 tower, Apple adds AV capabilities on the card: 24-bit video in/output, a TV tuner connector, and a DAV connector for digital and audio hookup.

With these personality cards, Apple saves on production costs by making a single motherboard and adding appropriate cards. For you and me, however, the benefits are not as clear, since you can't buy personality cards with the options you want. For example, the AV personality card is available only with the 266MHz tower—you can't buy one for the other Power Mac G3 models. And Apple has no plans to license the personality cards so other companies can make them. The short of it: These cards won't be available to users as upgrades, from Apple or anyone else.

For the time being, these cards may free up PCI slots, but since you can't buy personality cards with other features, you'll have to start adding PCI cards or external devices to add or upgrade features later. And with only three PCI slots in these new systems, you'll be cramped for space.

Bus Speed	Memory	VRAM	Hard Drive	CD-ROM drive	Zip Drive	Ethernet	Modem	Case
50MHz	64MB	8MB	4GB	24×	●	●		tower
66MHz	32MB	2MB	6GB	24×	●	●	●	tower
50MHz	64MB	2MB	6GB	24×	●	●	●	tower
50MHz	32MB	2MB	6GB	24×		●	●	tower-
66MHz	32MB	2MB	4GB	24×		●	●	desktop
66MHz	32MB	2MB	4GB	24×		●	●	desktop
50MHz	32MB	2MB	4GB	24×			●	tower

*s are relative to those of a Power Macintosh 7100/80, which has a SpeedMark score of 1.0. **Three configurations available.*

Standard Features

Expansion Slots The Power Mac G3 series comes with three PCI slots, as well as the DAV slot in the 266MHz tower. There's also the ZIF socket for upgrading to a faster CPU. For those who want a multiprocessing system, it's not clear if anyone will offer a ZIF-based upgrade, although it's technically possible.

RAM The three RAM slots, configured with a total of 32MB of RAM, are upgradable to 192MB in the desktop models. The tower model's six slots allow up to 384MB.

Video RAM On the motherboard, an ATI 3D Rage II chip with a 64-bit graphics accelerator chip are included with 2MB of VRAM. However, this card is upgradable to only 6MB, not 8MB.

Inside Apple's New Motherboard

Bigger isn't always better. Especially when it comes to motherboards. Among the first changes to Apple's motherboard design for a professional-level Mac since the 7500, 8500, and 9500 were introduced more than two years ago, the most noticeable is its size.

The mini-ATX board, at about the size of a sheet of paper, takes up less room inside the box. It's 36 percent smaller, for example, than the Power Mac 7300's motherboard. Because the board takes less room in the case, the hard drive's location drops to the base of the unit, which means more room in desktop cases for another device such as a Zip drive or an extra hard drive. Although this form factor is new to Apple Macs, the Mac OS licensees have been using the ATX form for over a year now and PC manufacturers have been using it for at least two years.

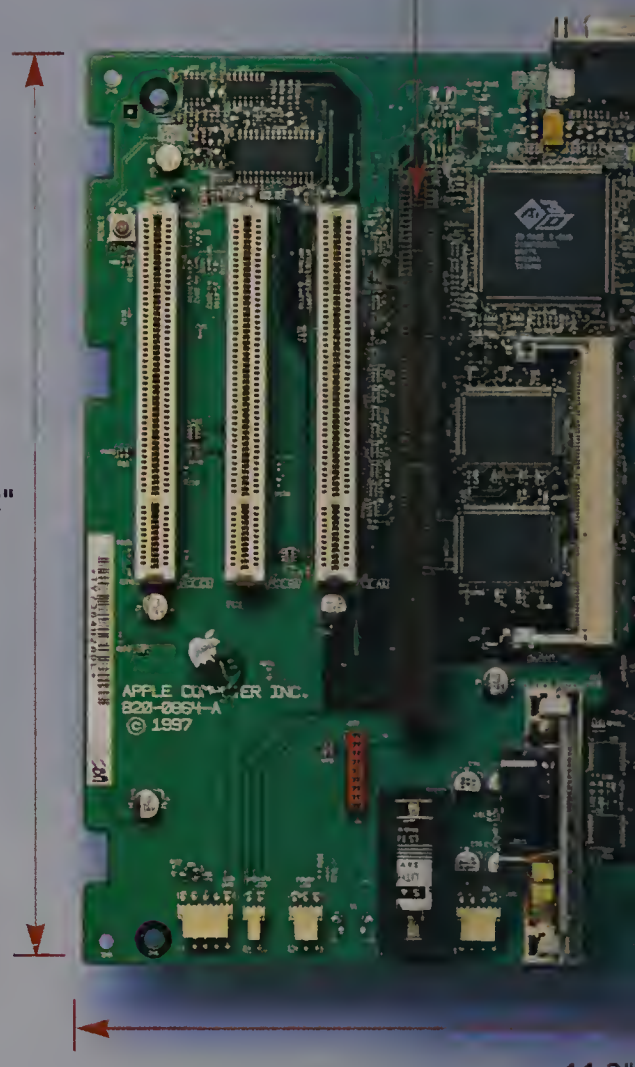
But what's not so visible is what's really significant. That smaller motherboard is a new design, one that has fewer layers of circuitry and shorter bus lengths, which together result in greater performance and lower manufacturing costs.

The removable CPU is also a combination of values: The ZIF socket is cheaper to make and means easier upgrades. These CPU sockets are a first for Apple but have been in the PC arena for over five years, before the first Pentium CPU. Moreover, Umax started using ZIF sockets with the introduction of its SuperMac C series last year.

A Fresh Design

Apple's new motherboard design adds more speed and upgrades by using both new and enhanced technologies.

Personality Connector
Apple's proprietary personality cards latch into this new slot to provide communications and sound functions, as well as AV functions in the 266MHz tower.



Smaller Motherboard The compact, clean design of the mini-ATX motherboard makes upgrading easier by moving slots to more convenient locations. It also helps open more space in the system's case for other components.

Storage The 233MHz and 266MHz Power Mac G3 desktop models include a 4GB IDE hard drive and a 24× CD-ROM drive, leaving two free externally accessible drive bays.

The 266MHz tower version has all the bells and whistles of the desktop models plus a 6GB hard drive, a Zip drive, and one free 5.25-inch bay.

In all three models, the use of IDE drives keeps costs down but also slows drive performance compared to that of the SCSI drives standard in most professional-level Macs.

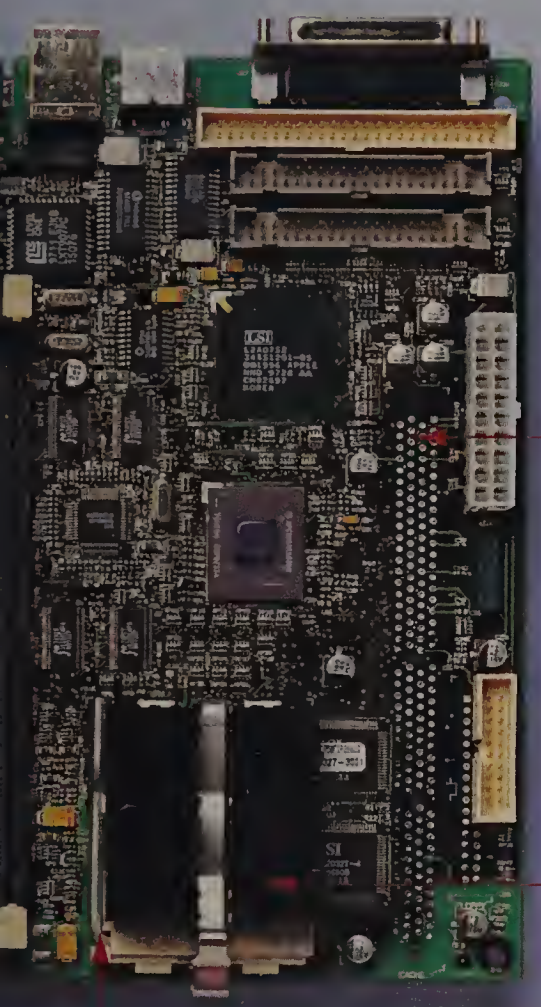
Ports As expected, Apple includes the traditional ports: 10BaseT Ethernet, two serial ports, an ADB port, the standard audio connectors, a Mac monitor port, and a SCSI-2 port. Note that the modem serial port is deactivated by the modem card that's on the personality card.

An Architecture with a Past

The architecture that underlies the new Power Mac G3 series, known as CHRP (Common Hardware Reference Platform), is nothing new to the Mac market. Mac OS licensees, such as Power Computing and Motorola Computer Group, developed these Macs and for several months campaigned to get them on the shelves. But as these systems, such as Motorola's StarMax 6000 and Power Computing's PowerTower Pro G3/275, slowly inched their way to the production line, Apple yanked them off.

Apple itself had championed the platform for three years as the way to achieve lower prices (by using PC-standard parts), more flexibility (by letting owners use PC and Mac peripherals), and more variety (by letting clone makers create their own Mac designs, not just use Apple's). While Apple no longer mentions CHRP, the technology lives on in abridged form in the Power Mac G3 series, delivering on CHRP's first goal: lower cost. Thanks to the remaining CHRP underpinnings, Apple's Power Mac G3s offer very high performance at unexpectedly low prices.

Abridged PC Compatibility Unlike the PowerTower Pro G3/275 and StarMax 6000 prototypes we looked at several months ago (see "Upstart Macs," October 1997), the Power Mac G3 series lacks some crucial aspects of CHRP. To our disappointment, the Power Mac G3s lack a



SDRAM Slots With the Power Mac G3s, Apple has brought to the Mac fast synchronous dynamic RAM (SDRAM), which fits into these three DIMM slots.

Backside Cache A new caching technique, known as backside cache, offers a substantial power boost by using a high-speed bus to connect the PowerPC 750 directly to the cache, moving data more quickly between the CPU and the cache.

PowerPC 750 This CPU, optimized for Mac business and graphics applications, provides a substantial speed boost over the 601, 603e, and 604e CPUs.

ZIF Socket Using a PC-style ZIF (zero insertion force) socket lets Apple keep costs down and saves space inside the case. Long used in the PC world, the ZIF socket will also make upgrades easier and less expensive.

parallel port, PS/2 serial ports, and a VGA monitor port—established CHRP standards. (A VGA port is now standard on Apple's new PowerBook G3.) Without a parallel port, low-cost printer options are still restricted. PS/2-style serial ports would let Mac users buy wireless keyboards and mice. Motorola's now defunct CHRP system had all these features.

Component Inflexibility The advantages to using industry-standard features are clear: Using common components decreases the system's overall cost and makes individual components more readily accessible to users.

Apple has implemented the first advantage but not the second. Although users can get components such as RAM and IDE drives from stores across America for do-it-yourself upgrades, they won't be able to get Apple or its dealers to custom-configure their Macs with different options from these readily available components—you're still restricted to what Apple decides to offer.

Three Kinds of Macs

For two years, Apple has been saying that it is going to streamline its product offerings. That's finally going to happen. Apple feels so confident about these Power Mac G3s that it intends to streamline all its Macs into just three product lines: the Power Macintosh G3 series; the high-end Power Macintosh 9600s (the 300MHz and 350MHz models will survive; lower-speed ones have been dropped); and the education-oriented, all-in-one Power Macintosh 5500.

Over the next several months, you'll see the Power Mac 7300 and 8600 series disappear as the Power Mac G3s bask in the spotlight. The Power Mac 4400 and 6500 series won't vanish as quickly, but eventually the new G3 systems will trickle into the small-office and home market as well. Take note: With the $1,999 233MHz Power Mac G3s entering the market at about the same price as the Power Mac 6500/250s, the latter may be gone sooner than you think. Expect fire-sale prices as dealers clear out their inventory of these now-slow systems.

The Last Word

We can all breathe a collective sigh of relief. With the future of the Macintosh in such a confused state for the last few years, it's comforting to finally see new systems that cater more to users' needs.

Still, it's unsettling to realize that, although these systems provide lower costs and greater performance bumps, Apple's Power Macintosh G3s are not the innovative new systems we had hoped for. No speed records were shattered, as with Apple's new notebook (see the article "Fastest Laptop Yet"). No PC technologies were implemented to broaden our peripheral options. And no new ingenious technologies were developed over what Mac OS licensees had already done: smaller ATX motherboards, removable ZIF CPUs, faster cache architectures, and the PowerPC 750.

Apple effectively slashed the prices of the Power Mac G3s by using a streamlined motherboard design, personality cards, and cheaper components. Unfortunately, it cut some corners too close in doing so: Apple should let other vendors make personality cards, and it should use faster IDE or SCSI drives.

The new Power Macintosh G3 line is a welcome, but not complete, addition to the Mac platform. Apple has successfully started to address its price/performance deficit but has yet to reclaim its position as a computing innovator. Still, low-cost industry-standard components and superfast CPUs move these Macs to the forefront—the first step to making the Macintosh market more accessible to its devoted users. **m**

Associate editor ALLYSON BATES used to cover all Mac vendors but now focuses her energies on Apple.

Fastest Laptop Yet

Macworld LAB TEST

New PowerBook Retakes the Lead

by Henry Bortman

Less than a year ago, Apple lay claim to the world's fastest notebook with its PowerBook 3400c/240, creating a sorely needed victory in the Mac/PC wars. Nine months later, the 3400c's speed is not so impressive, given the rash of fast Pentium notebooks that debuted in the summer. So Apple has struck back, producing the new PowerBook G3, which, according to Macworld Lab tests of a prototype, is twice as fast as a 3400c/240 and faster in most tests than a 233MHz MMX Pentium-based PC notebook. The result is a Mac notebook that again lays claim to being the world's fastest notebook.

And Apple's done this for about $5,700—$800 *less* than the 3400c/240 cost when it debuted. (The 3400c/240 now costs $4,500; the 3400c/200, $3,800; and the 3400c/180, $3,200.)

That's the good news. The bad news is that Apple has carried over several flaws and undistinguished aspects of the 3400c.

A Precocious PowerPC

The most important speed enhancement is the PowerBook G3's CPU, the PowerPC 750, the CPU used in the new Power Mac G3 desktop and tower systems.

The 750 Advantage Given that the PowerBook's CPU runs at 250MHz, a clock speed only a shade higher than that of the 240MHz CPU in the PowerBook 3400c/240, why is the PowerBook G3 so much faster? The answer is that the PowerPC 750 is a much faster chip, megahertz for megahertz, than the 603e that lies at the heart of the 3400c.

A Better Bus The PowerBook G3 has another advantage over the 3400c/240, by virtue of its faster system bus: 50MHz versus the 3400c/240 bus's 40MHz. The faster the system bus, the less time the CPU has to sit idle waiting for data to arrive from memory.

The PowerPC 750 incorporates what's known as a backside cache, which lets the CPU access data stored in the cache at 100MHz, twice the rate of the PowerBook G3's system bus. Compare that with the 40MHz cache speed of the PowerBook 3400c/240. Plus, the PowerBook G3 has a larger cache—512K versus 256K in the 3400c/240—which means it can handle more calculations too.

Performance Leap These factors—a faster CPU, a faster system bus, and an improved cache—add up to an eye-popping 71 percent speed increase in Macworld Lab's CPU-intensive suite of tests.

What this means to you is that the PowerBook G3 can beat out all but the fastest desktop systems available. Team up this new notebook with a high-resolution digital camera, and you'd have a combination that would give a professional photojournalist little to complain about.

Versus Pentium Portables It's all well and good to compare Apples to Apples, but how does the PowerBook G3 stack up against a top-flight PC notebook? To find out, Macworld Lab compared a PowerBook G3 with one of the fastest PC notebooks, the Gateway 2000 Solo 2300XL (800/846-4208, www.gateway.com).

The Solo 2300XL has a 233MHz MMX Pentium CPU, 32MB of RAM, a 256K cache, a 3GB hard drive, a 10× CD-ROM drive, a removable-storage bay, 2MB of video RAM, a 12.1-inch active-matrix screen, and a 33.6-Kbps modem.

Our test suite included three common Photoshop tasks, a 3-D render in Macromedia Infini-D, and two Microsoft Word tasks. The winner in almost every test was the PowerBook G3. On our Photoshop tests, the PowerBook beat the Solo by between 30 and 43 percent. The PowerBook did even better on the floating-point–intensive 3-D–rendering test. And its speedy graphics chip showed its advantage in our Word scrolling test.

The only test in which the Solo 2300XL bested the PowerBook G3 was the Word find-and-replace test. This just goes to prove that even a screaming-fast PowerPC CPU can't always overcome the engineering effort Microsoft expends to guarantee that its Windows apps outperform their Mac-based cousins.

On the other hand, the Gateway 2000 notebook costs only $3,799, nearly $2,000 less than the PowerBook G3—and $700 less, in fact, than the recently price-reduced 3400c/240.

What the PowerBook G3 Offers

If Apple had stopped at improving CPU performance, the PowerBook G3 would still have been a winner. But Apple didn't.

More RAM Apple has bumped up the



New Wine in Old Skin By its external appearance, it's hard to tell the PowerBook G3 from a 3400-series model. Apple used the same industrial design and the same screen for both. The PowerBook G3 is shown here with a CD-ROM drive (right) in its removable-storage bay (the floppy drive is also shown) and with a PC Card inserted (left).

Macworld LAB TEST

The PowerBook's Incredible Performance Leap

The PowerBook G3 represents an astonishing leap forward in speed. While admittedly not as fast as Apple's new Power Mac G3 systems, it leaves Apple's former top-performing PowerBook, the PowerBook 3400c/240, in the dust. Apple has made improvements in nearly every area affecting PowerBook speed: The PowerBook G3 contains a PowerPC 750 CPU running at 250MHz, a 50MHz system bus, a 512K backside cache (accessed at 100MHz), a high-performance 5GB IDE hard drive, and 2MB of VRAM for graphics display. The result is an unprecedented overall speed improvement of 65 percent over the PowerBook 3400c/240, for only 27 percent more money.

Best overall performance. Bold indicates best results in a specific test. ►New system. An Apple Power Macintosh 7100/80 has a SpeedMark score of 1.0; longer bars are better. Mac versus PC results are in seconds; lower times are better.

	SpeedMark	CPU	FPU	Disk	Video	Star Rating
The Fastest Notebook Mac . . .						
► Apple Power8ook G3 250MHz prototype	**3.3**	**3.6**	**3.6**	**2.2**	**4.0**	not shipping
Apple PowerBook 3400c/240	**2.0**	2.1	2.1	1.6	2.3	★★★★/7.2
Apple Power8ook 2400c/180	**1.6**	1.7	1.7	1.3	2.1	★★★/5.8
Apple PowerBook 1400c/166	**1.1**	1.2	1.2	1.0	1.0	★★★/6.1
. . . Catches Up to Desktop Systems . . .						
► Apple Power Macintosh G3 266MHz tower prototype	**4.5**	**5.0**	**4.2**	**3.0**	6.9	not shipping
Umax SuperMac S900/250	**3.5**	3.8	3.7	2.5	**7.3**	★★★/6.3
Power Computing PowerTower Pro 225	**3.4**	3.6	3.4	2.3	7.2	★★★/6.4
Apple Power Macintosh 9600/233	**3.3**	3.5	3.4	2.3	6.9	★★★/6.6
Apple Power Macintosh 8600/200	**2.7**	3.0	2.9	1.9	3.6	★★★/6.5

	Adobe Photoshop 4.0			MetaCreations Infini-D*	Microsoft Word**	
. . . and Blasts Past Pentium Notebooks	Convert RGB to CMYK	Unsharp Mask	Rotate to Arbitrary Angle	3-D Render	Scroll Document	Find and Replace
Apple PowerBook G3 250MHz prototype	**8**	**14**	**24**	**37**	**30**	11
Gateway 2000 Solo 2300XL (233MHz MMX Pentium)	14	20	35	108	69	**4**

**Infini-D 4.0 on the Mac and Infini-D 4.1 on the PC. **Word 6.01 on the Mac and Word 97 on the PC.*

Behind Our Tests All systems were tested with 32M8 of RAM. The PowerBook G3 prototype was running Mac OS 8. The PC notebook was running Windows 95.—Macworld Lab testing supervised by Susan Silvius

amount of RAM to 32MB, from 16MB in the 3400c. It's expandable to 160MB.

Bigger, Faster Drives The PowerBook G3's hard-disk drive is nearly twice the size of the 3400/240's: 5GB versus 3GB. And the new disk drive is 38 percent faster than its predecessor. You almost never see a jump in drive speed as large as those in CPU speeds; the drive's 38 percent gain is a *major* improvement.

A slow hard drive often negates the speed of a fast CPU, and Apple wisely avoids making that mistake by marrying a fast drive with a fast CPU—something it did not do, strangely enough, with its G3-based desktop systems.

And that extra 2GB provides plenty of room for all those huge presentations, Microsoft Office, and a game or two. You'd be hard-pressed to find a faster or higher-capacity drive for a notebook.

You'll also find a faster CD-ROM drive—20× versus 12× in the 3400c.

More Video RAM Apple has upped the VRAM complement from 1MB in the 3400c/240 to 2MB in the PowerBook G3. Smart move. Unfortunately, the PowerBook G3's VRAM, like the 3400c/240's, isn't upgradable. Dumb move. But 2MB is enough to provide you with 24-bit graphics at up to 832-by-624-pixel resolution and up to 1,024 by 768 pixels at 16-bit color when the PowerBook is connected to an external monitor. (The built-in screen's LCD technology limits its bit depth to 18 bits.) The external-video port is a 9-pin VGA connector, but Apple includes a VGA-to-Mac adapter.

The PowerBook G3's video display is fast—74 percent faster than the 3400c/240's, our tests show. Unfortunately, you still can't run an external monitor as a second monitor, as you can on most other Macs—the PowerBook G3, like the 3400c, can have the external monitor mirror the LCD panel's contents only if the LCD is also active. You also can display to an external 640-by-480-pixel device such as an LCD projector only if you turn off the LCD panel's display—both display devices must work at 800-by-600-pixel resolution for mirroring to work. Finally, you must restart the PowerBook G3 when connecting to an external monitor.

Other Features Otherwise, the PowerBook G3 is pretty much the same as a PowerBook 3400c: same boring case, same use of a nonstandard PCI slot, same PC Card slots, same support for Zoomed Video, same 12.1-inch active-matrix LCD screen, same ports (10BaseT Ethernet, high-density SCSI, audio input/output, ADB, and serial), same drive bay, same two-hour battery life, same speakers (with their poor-sounding subwoofer), and basically same weight (7.5 pounds).

The Last Word

Despite some carryover flaws from the 3400c, this new PowerBook will be the fastest notebook computer anywhere. This is a fully loaded, no-apologies system, able to perform the most-demanding tasks. It truly could function as a desktop replacement. And although it's not priced for the timid, we expect the PowerBook G3 to be worth every penny of the $5,700 you'll have to shell out for one. **m**

Senior technology editor HENRY BORTMAN uses a PowerBook 1400, but he'd like to upgrade.

A PARENT'S WISH

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Fun Stuff
Systems
Games
CD Roms

MACWORLD'S

Holiday Gift Guide

SNOW FALLS, BELLS RING, CANDLES GLOW, children sing, and shoppers cram into jam-packed malls across the land. 'Tis the season to get whipped into a frenzy in an attempt to find the perfect gifts for friends and loved ones. But if the special people in your life are Mac users, you're in luck. Our crack *Macworld* team has braved the crowds and scoured the catalogs, and we're back with a wish list you won't have to check twice.

For that cousin who's worn out his copy of Marathon Infinity and is ready to move on to new challenges, you can't go wrong with the array of amazing software in this year's Game Hall of Fame. If slaying demons or exploring alien worlds doesn't happen to be your friend's cup of tea, then consider our list of *Macworld*'s favorite CD-ROMs for kids of all ages.

As you salivate over those Editors' Choice–winning games and CDs, don't let your own aging Mac get you down. After all, there are more than a dozen speedy new Macs you can buy for less than $2,000. And the irresistible little extras we've uncovered that are bound to warm any Mac user's heart won't break your budget.

So sit back, put your aching feet up, and forget about the crowds. You've got an edge on all those crazed shoppers. Your little helper is *Macworld*'s Holiday Gift Guide.

Great Games.....page 80

Stellar CDs.....page 87

Bargain Systems.....page 93

Irresistible Extras.....page 98

HOLIDAY GIFT GUIDE

1998 Game Hall of Fame

Great Games



GET OUT YOUR JOYSTICKS FOR NONSTOP FUN

by Steven Levy and Cameron Crotty

AS INDUCTION TIME ROLLS AROUND AT THE MACINtosh Game Hall of Fame, things as usual are bustling. This is a relief, because—can we be frank here?—this hasn't been the greatest year for the Hall, what with all the uncertainty about, you know, the platform.

But now that our annual gala at the Hall's virtual headquarters in Pittsfield, Massachusetts, approaches, we feel OK. The RSVPs are tumbling in from Internet domains in Cupertino, San Rafael, Hollywood, New York, Tennessee, and Texas. The hoteliers in nearby Lenox report full houses. We expect a banner crowd in our grand ballroom, where one wall now sports a newly painted mural of a pumped-up handshake between Steve Jobs and Bill Gates.

We're hoping Mr. Jobs himself will attend, standing behind our joystick-equipped dais as we have him explain the process by which the Game Hall of Fame chooses its esteemed entrants: A duo of expert curators coolly evaluates the wealth of contenders and makes decisions that, although subjective, invariably stand the test of history. And then, with no need for a Reality Distortion Field, the Stevester will announce this year's winners: a stellar cast, in and of themselves a reason for optimism. Let the games begin!

Adventure

RIVEN ★★★★/8.3

Just as we were closing down our nomination process, a breathless messenger came to the Hall bearing the five-disc set of Riven, the long-awaited sequel to Myst. For the



Riven Don't pause too long to admire the beauty of the Riven world—you've got a lot of work ahead as you try to solve your way out.

next 30 hours all activity stopped as we slapped it on the Power Mac and, after a suitable period of slack-jawed admiration at the stunning graphics, immersed ourselves in a follow-up that, for once, actually tops the original in almost every respect.

Of course, those coming to Riven are much wiser than first-time Myst-ers and are familiar with the routines about linking books, arcane codes to operate machinery, and weird chairs that take you to strange places. But the amazing vividness of the graphics, live action, and sound here provides its own novelty. It is unimaginable that anyone captivated by the Miller Brothers' first effort will not want to dive into this new fantasy world.

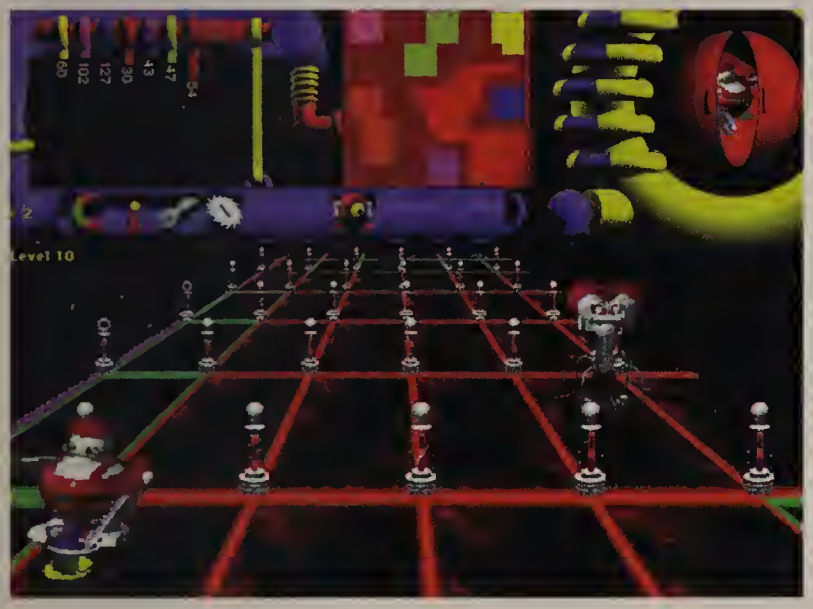
Red Orb Entertainment/Brøderbund Software, 415/382-4777, www.riven.com; $50.

Arcade

GRIDZ ★★★★/8.8

Territory rules in Gridz 1.0, a maddeningly compelling challenge that requires you to stake out a claim in a Net-Space, a spreadsheetlike battleground. Then you must defend your turf to the death and, hopefully, extend your domain to rule the grid.

It's not an easy endeavor, since both you and your foes (either computer-operated or human tormentors) conduct



Gridz The slightly orange red zone is your empire—in the map on top, note that you've got blue surrounded. In the foreground is a builder robot who's hoping to steal space from the pink zone.

war and real estate by use of accurately described "goofy little robots" designed to claim space, steal space from others, and buzz-saw (even bomb) opposing robots. (Upside: Sometimes it's smart to let others duke it out while you build strength.) Each time you conquer, a higher, trickier level awaits—but you also get points that allow you to buy more-exotic 'bots.

Playing Gridz is addictive, plus the fanciful, often hilariously destructive robots are a hoot. And the game's sounds—grinding, beeping, *kaboom*ing—are not only cool but also crucial in allowing you to identify threats to your 2-D empire.

Green Dragon Creations, 601/473-4225, www.greendragon.com; $35.



F/A-18 Hornet Tell the boys on the ground to pull their heads in and button up, because the high heat is on the way, extra pronto.

Flight Simulator

F/A-18 HORNET ★★★★/8.8

A perennial contender for the flight category, Graphic Simulations' F/A-18 Hornet has only improved over the years. Version 3.01 breaks through with improved graphics and even more-realistic cockpit-system simulations.

A large part of being a successful pilot is developing "situational awareness," and while your Hornet feeds you plenty of data, it's up to you to analyze it and act like a real pilot. Whether you're flying against the computer or a real opponent, Graphic Simulations' latest provides quality air time and then some.

Graphic Simulations, 972/386-7575, www.graphsim.com; $30.

Strategy

CREATURES ★★★★/7.7

For all the hue and cry about "artificial life"—using computers to create digital beings that actually live, if not breathe—the most fetching organisms to emerge from silicon so far have been those little Tamagotchi things that kids drag around.

Until now. Creatures allows you to hatch little reptilian pets called Norns and raise them as your own, even teaching them language. Virtual parenthood isn't easy. It takes skill, patience, and forbearance—but not private-



Creatures It's up to you to train your little creature, or Norn. The hand can either praise (by tickling the nose) or punish (by slapping the butt). Paging Dr. Spock!



Links LS There's nothing like a relaxing round of golf. You can almost feel the wind in your face and smell the trees while you listen to your ball crash through the underbrush.

school tuition—to see a Norn through childhood and adolescence and into adulthood. You do have to watch out for the Grendels, who live in trees and carry diseases that could doom your Norn. Although Creatures can draw you in powerfully (maternal/paternal instinct runs deep), be forewarned that after only 15 hours or so, a Norn can die of old age.

Mindscape Entertainment, 408/737-6800, www.creatures.mindscape.com; $40.

Action

DUKE NUKEM 3D: ATOMIC EDITION ★★★★/7.0

He's mad, bad, and dangerous to know, but if you're a Mac gamer looking for a serious shot of attitude, Duke Nukem might just be the best friend you've got, pilgrim. With an impressive and entertaining array of weaponry and other fun hardware (we love the JetPak), Duke takes on hordes of invading aliens in level after level of colorful and downright *creepy* surroundings.

Parents and the easily offended should note that Duke Nukem (developed by 3D Realms) is definitely R-rated for both violence and sexual content, but the game's comic tone and addictive action more than make up for the occasional crudity. Load up on the heavy artillery, and let's go get some!

MacSoft, 612/509-7600, www.wizworks.com/macsoft; $50.



Duke Nukem 3D It's always a party when Duke Nukem comes to town. Those evil aliens should know better than to leave high explosives just lying around, shouldn't they?

Sports

LINKS LS MACINTOSH ★★★★/8.6

Computer sports simulations are always compromises—just check the difference in your heart rate after clicking a mouse and after running 100 yards, and you'll see what I mean. Perhaps because golf is more about finesse than sweat, Links LS manages to capture much of the game's elusive essence. A few moments spent soaking in the lush graphics and background sounds will put you in the mood to adjust your stance, check the wind, and go for the perfect swing. Just remember to hold on to that Zen-like calm after you shank another drive into the hardwoods. Links is, after all, a simulation.

Access Software, 801/359-2900, www.accesssoftware.com; $50.

Kids

PUTT PUTT TRAVELS THROUGH TIME ★★★★/8.7

It's only fitting that the first inductee in this long-overdue category involves an adorable little jalopy named Putt Putt, protagonist in a series of no-reading-necessary adventure games that present a wonderful alternative to the twitch games and the preachy-teachy stuff usually offered to cyber-whippersnappers.



Putt Putt Travels through Time Putt Putt meets characters like this grizzled prospector. Hear these buzzards out—you might get something you need.

This is the fourth in a series—previously the Puttmeister has gone on parade, to the moon, and to the zoo—and each journey has been more elaborate than the previous, loaded with fascinating characters and interesting diversions (as well as a catchy soundtrack that lasts longer than the game, which itself lasts for hours).

In this iteration, the plucky little auto has to time-travel to retrieve his belongings; an unfortunate incident involving fireworks has spread them centuries apart, as early as dinosaur days and as late as the Jetson-ion future.

As with the other Putt Putt games, there is a point behind all the jollies: to encourage junior adventurers to master the reasoning and problem-solving skills necessary to complete the task. But the bottom line is fun, and as in grown-up adventures, the journey itself is the reward.

Humongous Entertainment, 425/486-9258, www.humongous.com; $40.



Quake This MacSoft game showcases developer Id Software's visions of death and destruction, which have always been a little darker and more twisted than most.

Network

QUAKE ★★★★/8.6

The office clock reads five-oh-oh and—after a long day of mollycoddling incompetents—it's time to kick a little ass. Reach for your copy of Quake 1.08.3 (developed by Id Software), and get ready to light up the network. Quake's realistic 3-D environment delivers unparalleled realism to point-and-kill sessions, but the basic software package is only the tip of the iceberg.

Quake is nearly infinitely customizable and has spawned a huge following. A quick jaunt through the Web will hook you up with new maps, new weapons, and literally hundreds of fellow gamers itching for a Deathmatch. Quake sets a new standard for network gaming.

MacSoft, 612/509-7600, www.wizworks.com/macsoft/; $50.

Role Playing

THE LAST EXPRESS ★★★★/8.7

It's Myst meets Agatha Christie in this absorbing ride on the Orient Express. Europe is preparing for World War I, but your problem is more immediate: You are Robert Cath, an



The Last Express Who knows who you'll meet on the Last Express? Maybe Alexei, a Russian anarchist. Will he punch your ticket?

HARDWARE

F-16 FIGHTERSTICK ★★★★/8.7
PRO THROTTLE ★★★★/8.4

FOR YEARS WE'VE WAXED RHAPSODIC ABOUT THE Macintosh game software, but never before has *Macworld* doffed its hat to the hardware side of the aisle. We couldn't ignore this last year's bumper crop of joysticks, pedals, thumb pads, and other specialized doodads designed to enhance your gaming experience.

With so many worthy candidates, choosing a winner was a tough call—but that's the kind of high-pressure situation Game Hall of Fame curators thrive in. And so we induct CH Products' (760/598-2518, www.chproducts.com) F-16 Fighterstick ($120) and Pro Throttle ($100). Both controllers are solid-feeling and responsive, sport loads of buttons and switches, and come with software that makes configuration a snap.



One-Two Punch The Pro Throttle (left) and the F-16 Fighterstick (right), from CH Products, deliver the precision hands-on control that Mac gamers need to stop the bad guys in their tracks.

We would be remiss, however, if we didn't tip our hats to the runners-up: two companies that have been faithfully serving up quality products to Mac gamers for years.

Advanced Gravis Computer Technology (604/431-5020, www.gravis.com) was one of the first companies to fly in the face of tradition and offer game hardware to the Mac community. Its original Mousestick and current Mousestick II ($60) were like manna from heaven for a generation of Mac game enthusiasts, and it's kept up the pace with several recent new releases—the Firebird ($90) and the Blackhawk ($70).

ThrustMaster (503/615-3200, www.thrustmaster.com) deserves credit for being the first company to bring realistic flight-sim hardware to the Mac. Its Flight Control System for Macintosh ($110) and Weapons Control System for Macintosh ($75) remain first-class choices for any flight-sim enthusiast.—CAMERON CROTTY

American who boards the venerable train, only to find his buddy dead in compartment one.

What transpires next is an adult-directed murder mystery, rendered in exquisite graphics inspired by Toulouse-Lautrec (eat your hearts out, Doom players) and unfolding in an orderly, brisk progression that keeps you alert while not punishing you for experimenting. (If you do make a fatal error, you can "rewind" the game to the point before which you committed your boo-boo.)

What makes The Last Express vividly memorable is the painstaking detail, particularly the lush score and the faithfully rendered sounds of the most famous train ever. So while you may never solve this three-disc conundrum, you'll never forget the ride.

Red Orb Entertainment/Broderbund Software, 415/382-4777, www.lastexpress.com; $40. **m**

Veteran Game Hall of Fame curator and *Newsweek* senior editor STEVEN LEVY wrote *Insanely Great: The Life and Times of Macintosh, the Computer that Changed Everything* (Viking, 1994). CAMERON CROTTY, an ex–arcade rat, made his living hustling Tempest until he figured out that he could get paid for writing about computer games.

COMING ATTRACTIONS

A GAMER AND A PROGRAMMER will never be satisfied. The latter always wants to add "just one more thing," while the battle cry of the former is, "That was cool. What's next?"

In the spirit of these two archetypes, the curators of the Game Hall of Fame this year encouraged companies to let us see their best stuff, even if it wasn't quite finished. A game can be considered for induction only if it ships before our deadline, but here's the inside dope on a couple of contenders for next year—which should be out for the holidays. —CAMERON CROTTY

Myth: The Fallen Lords

In the fantasy vein, Bungie Software (312/563-6200, www.bungie.com) is busy pushing the envelope of real-time strategy games with its much anticipated Myth: The Fallen Lords. Fallen Lords ($49) focuses intensely on battlefield tactics: You direct the actions of natural and supernatural troops in a real-time 3-D environment while circling over the entire field of combat from a god's-eye view. Early returns on time spent in the command chair are extremely positive—this will be a network game to watch out for.

Diablo

Mac gamers who have been looking longingly over their friends' shoulders at Blizzard Entertainment's (714/955-0283, www.blizzard.com) action/role-playing PC hit Diablo now have reason to rejoice: We've played betas, and the Dungeons and Dragons–style game is nothing short of awesome. Diablo ($50) eschews the first-person point of view in favor of a top-down three-quarter view in a 3-D environment. The graphics are beautiful, the game play is exciting and intriguing, and we have to finish writing this fast because we want to play more right now!



Battle Plan Directing an army in combat in a swamp in the rain isn't an abstract exercise in Myth: The Fallen Lords.



Clobberin' Time In Diablo, going face-to-face with a rabid pack of Blood Knights is all in a day's work for your basic adventuresome heroic types.

network need a little

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Circle 60 on reader service card

by Wendy Sharp



Stellar CDs

FIND A GIFT FOR EVERYONE ON YOUR LIST

THIS IS THE SEASON TO SEEK OUT PRESENTS FOR LOVED ones far and wide, and a grueling task it can be! Nothing's worse than giving gifts that sit around unused and underappreciated, except perhaps receiving gifts that *you* hate.

We can't solve all your gift-giving dilemmas, and there's nothing we can suggest for folks who don't have computers or CD-ROM drives (perish the thought). However, this guide can help you choose the perfect CD-ROM for all your computer-savvy friends and family.

We picked our favorite CDs, using a stringent set of objective criteria. First, the CDs had to be fast. Too many discs make you sit at your computer tapping your fingers and wondering if anything's happening. Second, they had to be easy to use. If you have to memorize the manual, we bagged the disc. Third, they had to be fun—or at the very least, interesting. Did we say objective? Well, OK, there were some highly *subjective* criteria. Last, we wanted lots of variety and chose CDs from a wide range of categories to make sure there'd be a great gift for everyone on your list.

Business

TEAMS THAT WORK ★★★★/7.1

A fine present for a small-business owner (but a bit pricey), this CD-ROM teaches business managers how they can work effectively in teams. Using videos, expert commentary, and text explanations, the disc explores the dynamics of teamwork, from conflict management to the use of power. Checklists and worksheets help you assess your team's strengths as well as diagnose its problems. The most enjoyable part of the CD is an interactive case study that allows you to take on the role of a team member. As you watch QuickTime movies, read memos, and listen to voice-mail messages, you make decisions and confront problems that teams typically face. Through occasionally dry but generally interesting QuickTime videos, author Anne Donnellon offers input about the issues managers face and the choices they make.

Harvard Business School Publishing, 617/496-1449, www.hbsp.harvard.edu; $295.

Culture

TREASURES OF THE AMERICAN MUSEUM OF NATURAL HISTORY ★★★★/8.2

There are tons of CD-ROMs that let you explore different museums, but this tour of the American Museum of Natural History is one of the best. Wander through 50 exhibits, ranging from meteorites to dioramas. Along the way, read text articles on all 50 topics, listen to recorded speeches, look at photographs, and watch movies and interviews. You can even tour QuickTime VR panoramas of exhibits such as the Akeley Hall of African Mammals. Various surprises, such as a morph demonstrating human evolution, add to the fun. The attractive and appealing interface uses icons to make navigating simple and *a lot* easier on your feet than the real thing. Although this CD is a bit sophisticated for kids (the text is closer to college level than junior-high), several exhibits are fun for all ages. For one, the Dinosaur Dig Game lets you uncover and assemble dinosaur bones in a jigsaw puzzle that any dino enthusiast will enjoy.

Voyager, 800/446-2001, www.voyager.com; $40.

Documentary

WITNESS TO THE FUTURE ★★★★/7.2

Inspiration doesn't always come in a cheerful package, but



Witness to the Future The film footage on this CD includes stark imagery of badly damaged environments.

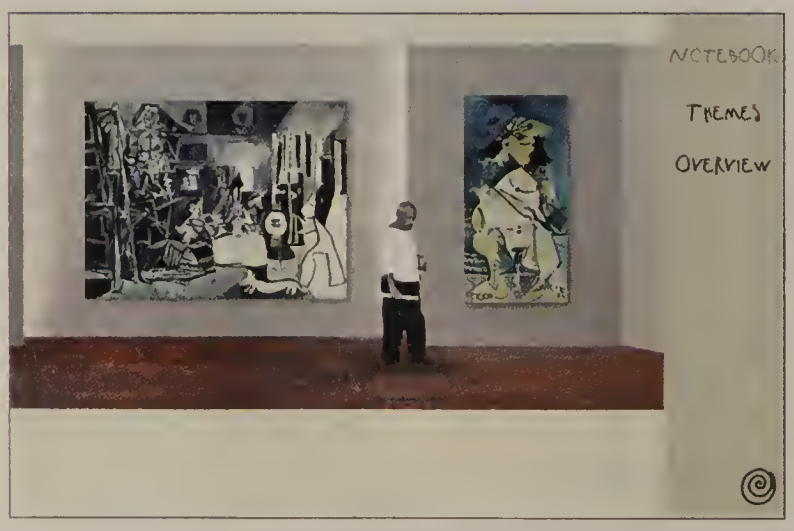
if you seek thought-provoking material for an environmentally inclined friend, look no further. Based on a film about environmental problems faced in three communities—Hanford, Washington; California's San Joaquin Valley; and Cancer Alley, Louisiana—this disc includes all the film's footage, in addition to complete transcripts of the interviews involved, background information on the towns, and the text of Rachel Carson's *Silent Spring*. Especially compelling are the accounts of various whistle-blowers who have faced persecution and hostility for exposing corruption and dishonesty. The CD also includes links to the Witness to the Future Web site and 250 other sites. You may want to wrap it along with a box of tissues, but rest assured, this moving portrait of real people acting bravely is a gift your friend will not forget.

Voyager; 800/446-2001, www.voyagerco.com; $40.

Fine Art

PICASSO: THE MAN, HIS WORKS, THE LEGEND ★★★★/7.8

Style and substance blend on this CD-ROM starring one of the 20th century's most famous artists. Approved by the Picasso family (and, perhaps as a result, light on criticism of the artist's life), this CD contains more than 600 artworks plus explanations of the styles, techniques, motifs, and themes of Picasso's work. You explore the CD via a Quick-



Picasso Picasso himself walks amid 17 of his works of art in the QuickTime VR panorama that provides this CD's basic interface.

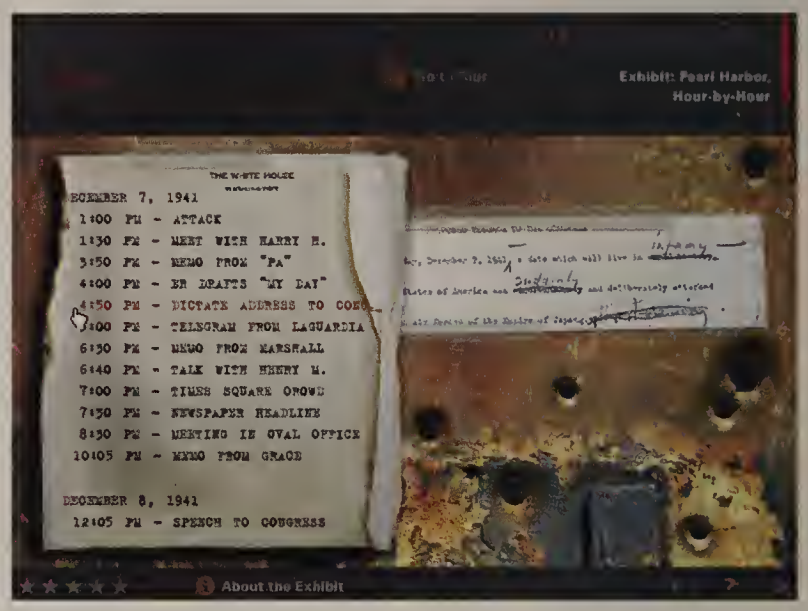
Time VR panoramic gallery. Click on one of 17 paintings (which represent the creative periods of the painter's life) to enter a timeline with biographical information, photos, film clips, and more. Best of all, the CD is a remarkable work of art in its own right—theme music and design create a stylish, postmodern look and feel. For example, the alphabet in the index looks scribbled, randomly sized, and disorderly—just as Picasso might have written it himself.

Grolier Interactive, 203/797-3530, www.grolier.com; $40.

History

FDR ★★★★/8.3

For the history buff in your life, we recommend this CD-ROM detailing the life and times of Franklin Delano Roosevelt. By weaving together movies, photographs, personal documents, vintage audio clips, and newsreel footage, this CD lets you fully explore the longest American presidency. There's smart and articulate analysis by noted historians Doris Kearns Goodwin, Geoffrey Ward, and Bill Leuch-



FDR Small touches such as this handwritten excerpt from Roosevelt's draft of the famous "Day of Infamy" speech bring this CD to life.

tenberg. Several touches—including reproductions of historic documents, such as the draft of Roosevelt's speech after Pearl Harbor, and interactive photographic tours of the Roosevelts' five homes—add to the feeling of immediacy. This disc is an especially fine gift for a teenager interested in history, as it really makes the past come alive.

Corbis, 206/641-4505, www.corbis.com; $40.

Home

WILLIAMS-SONOMA GUIDE TO GOOD COOKING ★★★★/8.3

This mouthwatering cookbook will pique any chef's palate. The CD-ROM contains 50 menus compiled by Chuck Williams, the founder of Williams-Sonoma. Its glossary defines and illustrates hundreds of terms and includes QuickTime movies of cooking techniques. The search engine lets you find recipes by characteristics such as cooking time and ingredients, while the index of 1,000 recipes also makes it easy to find just what you seek. Most CD-ROM cookbooks offer similar features; what distinguishes the Williams-Sonoma cookbook is the sheer beauty of its



Williams-Sonoma Guide to Good Cooking Cooks and food lovers alike will lick their lips over this CD-ROM's food photography.

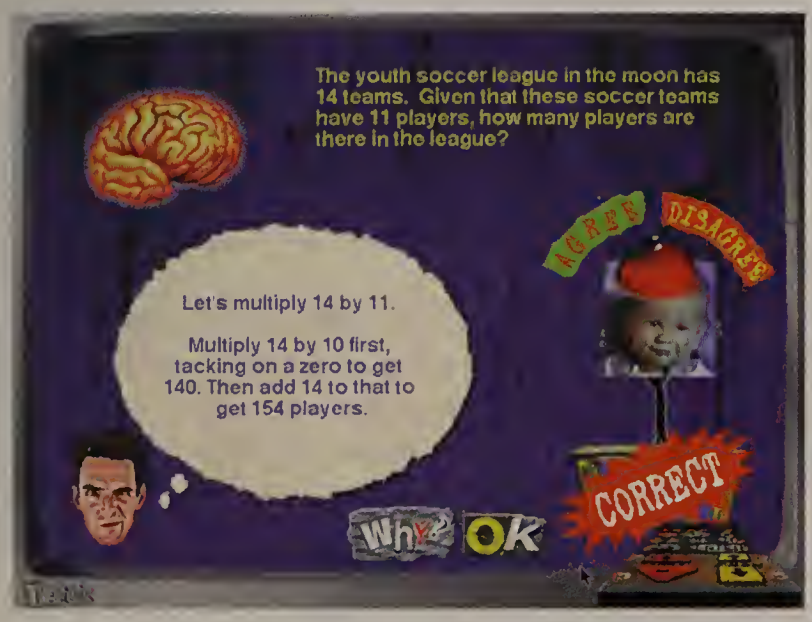
pictures, the interesting food facts scattered throughout, the appeal of its recipes, and its straightforward but remarkably attractive interface. Anyone who enjoys browsing cookbooks will find this one—from its main menu (which looks like a cluttered kitchen table) to its favorite-recipes list worthy of Martha Stewart—a delicious treat.

Brøderbund Software, 415/382-4400, www.broderbund.com; $40.

Kids' Education

MATH HEADS ★★★★/8.2

Wacky, fast-paced, and frantic, this math game might drive parents crazy, but kids ages 10 to 14 will have a good time and learn a lot, too. Using an on-screen remote control, you flip from channel to channel on the Math Head interactive television network. Three game shows challenge you to think fast and to estimate accurately and reward you either with prize money or the chance to create your own music videos. You can even spend your prize money on the shopping channel! In our favorite game, Go Mental, celebrities tell you how they've solved math problems. You decide whether they've done it correctly. Even the infomercial channel teaches practical math skills in a fun and entertaining way. Nothing's going to make math as appealing as MTV, but this game sure comes close.



Math Heads The game shows on Math Head TV challenge you to think fast and to estimate accurately.

Theatrix Interactive, 510/658-2800, www.theatrix.com; $30.

Kids' Entertainment

PAJAMA SAM IN "NO NEED TO HIDE WHEN IT'S DARK OUTSIDE" ★★★★/8.0

In this game for kids ages 3 to 8, Pajama Sam, the world's youngest superhero, sets forth to battle Darkness with his trusty flashlight; mask; and signature-edition all-metal Pajama Man lunch box. Alas, some unfriendly trees swipe his stuff, leaving you to help Sam search the Land of Darkness for his belongings. Along the way, you'll meet dancing furniture and talkative vehicles, plus such notable individuals as the carrot leader of the Salad Liberation Front (whom you help lead a kitchen revolt). Combining the point-and-click animated surprises of Brøderbund's Living Books with the problem solving and puzzles of an adventure game, this charming children's game is fun for grown-ups, too.

Humongous Entertainment, 206/486-9258, www.humongous.com; $40.



Pajama Sam As Pajama Sam searches for his lost belongings, he discovers—much to his dismay—that the furniture likes '70s disco music.

Reference

BRITANNICA CD 97 ★★★★/7.7

For sheer comprehensiveness, it's tough to beat the Britannica CD 97. With its more than 40 million words of content, you can find information on pretty much any topic. Its natural-language search function lets you ask questions in plain English—"Who invented the computer?"—and returns a list of articles ranked according to relevance. Britannica CD 97 uses the Netscape Navigator Web browser as its functional, but not particularly flashy, interface. If you have Web access, you can link to Britannica Online to download the most-up-to-date information available (at a cost of $50 per year). Using Britannica isn't smooth—some links don't work—and it lacks the whizzy multimedia features of some other encyclopedias, but it offers an incredible amount of information for a reasonable price.

Encyclopædia Britannica, 800/747-8503, www.eb.com; $150.

Science

EYEWITNESS VIRTUAL REALITY EARTH QUEST ★★★★/7.1

For a one-of-a-kind CD-ROM experience, check out Earth Quest. This beautiful (but slow) science CD lets you explore a 3-D rendered landscape of Earth's interior. In a simulated underground museum, you can create earthquakes or volcanoes and watch their effects on a landscape. You can also wander through galleries of gems, rocks, and crystals, watching them develop and learning how they form. Collect minerals from the galleries and answer questions about Earth to enter the CD's Earth Builder section and learn how the continents formed. Be aware, though, that this CD is a memory hog; with 16MB of RAM, we encountered numerous "out of memory" messages.

DK Multimedia, 440/572-0725, www.dk.com; $30. m

WENDY SHARP is a freelance writer and coauthor of *Macs for Kids and Parents,* from IDG Books.



Earth Quest Learn all about the formation of the continents in this CD-ROM's Earth Builder game. Entire centuries pass in seconds as you watch the continents transform through five geological time periods.

THE RUNNERS UP

FIVE FOR KIDS

1 Big Science Comics ★★★★/8.1
This animated comic book for kids ages 8 to 12 offers puzzles that explore physical forces such as buoyancy and elasticity. *Theatrix Interactive, 510/658-2800, www.theatrix.com; $30.*

2 Freddi Fish 2: The Case of the Haunted Schoolhouse ★★★★/7.7
This amusing underwater story for kids ages 3 to 8 is about ghosts who are not what they seem. *Humongous Entertainment, 206/486-9258, www.humongous.com; $40.*

3 How Many Bugs in a Box? ★★★★/7.5
This brightly colored, kid-friendly CD includes 8 simple counting games suitable for kids ages 3 to 6. *Simon & Schuster Interactive, 212/698-7000, www.simonsays.com/cddomain/; $20.*

4 Orly's Draw-A-Story ★★★★/7.4
The pictures you draw come to life in this cool multimedia storytelling program. *Broderbund Software, 415/382-4400, www.broderbund.com; $29.*

5 Ready to Read with Pooh ★★★★/7.4
Pooh fans will love seeing and playing with Piglet, Eeyore, and Roo, although this game for ages 3 to 6 is a little slow. *Disney Interactive, 818/543-4300, www.disney.com; $35.*

FIVE FOR GROWNUPS

6 Leonardo da Vinci ★★★★/7.7
This richly detailed CD-ROM on Leonardo da Vinci enables you to explore a gallery of his work. *Corbis, 206/641-4505, www.corbis.com; $50.*

7 A Night to Remember ★★★★/7.3
Immerse yourself in the details of the *Titanic*'s famous demise. The CD includes the complete footage of its namesake 1958 movie. *Voyager, 800/446-2001, www.voyagerco.com; $30.*

8 Canon Photography Workshop ★★★★/7.2
Learn how to improve your photographs through hands-on lessons in this nicely designed CD. *Multicom, 206/622-5530, www.multicom.com; $20.*

9 Elle Cooking ★★★★/7.1
The simple interface of this CD is perfect for those pressed for time, and its 2,000 recipes look delicious. *Grolier Interactive, 203/797-3530, www.grolier.com; $30.*

10 Castle Explorer ★★★/6.9
This beautiful but slow CD lets you explore a medieval castle. *DK Multimedia, 440/572-0725, www.dk.com; $30.*



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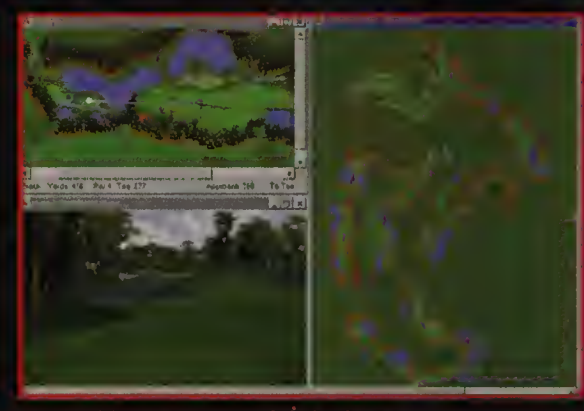
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Circle 40 on reader service card



by Allyson Bates

Bargain Systems

BUY THE BEST MAC UNDER $2,000

AT THE HEIGHT OF THE holiday season, more than a dozen new Mac models are available for less than $2,000 each—and at those prices, even Scrooge himself wouldn't be able to resist getting a new Mac right now. Whether you're shopping for loved ones or searching for an addition for your office, there's a way to find the perfect Macintosh without breaking your budget.

Make a List

Buying a new computer can be pretty intimidating. Even power users don't have to think about such things as CPU clock speed, Level 2 cache, and bus speed very often. But you'll need to know what to look for inside the case of a low-cost Macintosh if you want to get the best one for your money.

First decide how much you want to spend and who will be using the new machine. Whether you're buying a Macintosh for a rabid game player, your grandmother, or your own small business, you will need to find the system that best fits the job.

Fortunately, you have plenty of choices. Apple Computer and Umax Computer offer a whopping 13 Mac models for less than $2,000 each. (For a complete list of the features those models offer, check out the table, "A Budget's Best Friend: 13 Macs Under $2,000.") And if you hurry, your selection won't be limited to those two companies—you can also look for closeout systems from companies leaving the Mac-clone market, such as APS Technologies (813/483-1600, www.apstech.com), Motorola Computer Group (800/759-1107, www.mot.com/starmax/), and Power Computing (512/388-6868, www.powercc.com).

All the Trimmings

Despite what you may have heard, a computer's speed isn't dictated exclusively by the speed of its CPU. It's influenced by a combination of several interdependent factors: the processor type and speed, the amount of RAM installed, bus speed, cache, and video RAM. Because a chain is only as strong as its weakest link, you should carefully balance these categories.

CPU Type When it comes to low-cost Macs, two CPUs prevail: the PowerPC 603e and 604e. Most of the low-cost Macs are 603e-based, but if you stumble across a good bargain on a 604e-based Mac, such as Umax's $1,795 SuperMac J700/180, you should snap it up. According to Macworld Lab tests, systems based on the 604e are usually 30 percent *faster* than 603e-based Macs running at the same clock speed. Apple's latest low-price system, the $1,999 Power Mac G3 (see "Apple's Next-Generation Systems," in this issue), uses the PowerPC 750 CPU—an even speedier CPU than the 604e.

CPU Clock Speed Although it *is* important, clock speed, which is measured in megahertz (MHz), is one of the most overrated indicators of computer speed. For example, a 250MHz CPU is typically 5 to 10 percent faster than a 225MHz CPU—and costs roughly $400 more. That increase may be a big deal for artists trying to push Adobe Photoshop to its limits, but for Finder operations and for most general applications, you won't notice the difference.

Bus Speed Since the Mac's system bus regulates the speed at which the CPU communicates with the rest of the system, having a fast CPU with a slow bus is a little like driving a Ferrari in a traffic jam. Avoid Macs with slower, 40MHz buses if possible.

Cache Together, CPU

clock speed, bus speed, and Level 2 cache are the three most important factors determining how fast your Mac runs. The cache ensures that the CPU isn't forced to stop doing work while it's waiting for the bus to catch up with it. Because most people don't realize the importance of cache, many low-cost systems come with *none*. Insist on a cache of at least 256K. And if you're lucky, you'll find a system such as the $1,795 Umax SuperMac C600x/240, which comes with a hefty 1MB cache.

RAM When it comes to memory, too much is never enough. These days, RAM is dirt-cheap (approximately $60 for 16MB), so leave room in your budget for extra RAM. Most budget Macs are configured with a mere 16MB of RAM. If you plan to use your computer only for e-mail or other basic tasks, you can get by with that much, but if you're hunting for a bargain gaming computer or want to do entry-level desktop publishing, RAM is a good place to splurge. We recommend 32MB to 48MB for most gamers and business users.

VRAM Video memory, or VRAM, is important for all computer users, but it's especially important for gamers and users of graphics-oriented programs, since it lets a monitor display greater detail and more colors and speeds up screen drawing. When you buy your new Mac, request at least 2MB of VRAM—and make sure the VRAM can be increased to 4MB. Most economy systems, including most of Umax's SuperMac C600 and C500 series, come with only 1MB of VRAM.

Hard Drive Every Mac we looked at has at least a 1.2GB hard drive, but you can never have too much storage. The good news is that 2GB drives are cheap and higher-capacity drives aren't a lot more expensive. Your software collection and files will only grow with time, especially if you're going to store large graphics files or install massive CD-ROM games on your hard disk. Our advice: Get plenty of storage now—preferably 2GB to

A BUDGET'S BEST FRIEND: 13 MACS UNDER $2,000

					SPEED-RELATED FEATURES				MEMORY		
Company	Product	Star Rating[A]	Company's Estimated Price	Speed-Mark[B]	CPU Type	CPU Speed	L2 Cache	Bus Speed	RAM	Free RAM Slots	VRAM (std./max.)
Apple Computer 408/996-1010 www.apple.com	Power Macintosh 4400/200	★★★/5.5	$1,500	1.9	603e	200MHz	256K	40MHz	16MB	3	1MB/1MB
	Power Macintosh 5500/225	★★★/6.7	$2,000	2.1	603e	225MHz	256K	50MHz	32MB	0	1MB/1MB
	Power Macintosh 6500/225	★★★/6.1	$1,600	2.1	603e	225MHz	256K	50MHz	32MB	2	2MB/2MB
	Power Macintosh 6500/250	★★★/6.0	$2,000	2.2	603e	250MHz	256K	50MHz	48MB	2	2MB/2MB
	Power Macintosh G3	NA[C]	$1,999	4.0[C]	750	233MHz	512K	66MHz	32MB	2	2MB/6MB
Umax Computer 510/226-688 www.supermac.com	SuperMac C500LT/200	★★★/5.4	$995	1.7	603e	200MHz	256K	40MHz	16MB	2	1MB/1MB
	SuperMac C500/240	NA[C]	$1,295	1.8[C]	603e	240MHz	256K	40MHz	24MB	2	1MB/1MB
	SuperMac C600/200	★★★/5.1	$1,195	1.8	603e	200MHz	256K	40MHz	16MB	2	1MB/1MB
	SuperMac C600LT/240	★★★/5.0	$1,395	1.9	603e	240MHz	256K	40MHz	24MB	2	1MB/1MB
	SuperMac C600x/240	★★★/6.0	$1,795	2.4	603e	240MHz	1MB	80MHz[F]	32MB	2	1MB/1MB
	SuperMac C600x/280	★★★/6.2	$1,995	2.5	603e	280MHz	1MB	80MHz[F]	32MB	2	2MB/2MB
	SuperMac J700/180	★★★/5.6	$1,795	2.7	604e	180MHz	512K	51.2MHz[F]	24MB	8	2MB/4MB
	SuperMac J700/233	NA[C]	$1,995	2.7[C]	604e	233MHz	512K	40MHz	24MB	8	4MB/8MB

● = yes; NA = not available [A] Based on features, implementation, innovation, performance, reliability, ease of use, and value. [B] Macworld Lab's SpeedMark test compares different systems' real-

$100 more. [E] Available with Ethernet for $100 more. [F] Cache-doubler technology installed to increase bus speed.

4GB—to avoid having to swap drives in the future.

Stocking Stuffers

When you've taken care of what's inside your Mac, you're still not done—in many ways, the peripherals you add to your system are just as important as what's inside.

Monitor Without a monitor, your new Mac won't do anything but collect dust. Unfortunately, most Macs don't come with this must-have peripheral, so you'll need to budget an additional $300 for a decent 15-inch monitor. Although a 17-inch display (which costs about $700) expands your viewing capabilities (and is especially appealing to gamers and publishers), most business and home users will find a 15-inch monitor perfectly usable. No matter what size you choose, check out "17-Inch Screen Stars," July 1997, for more details about what you should look for in a monitor.

CD-ROM Drive These days, all computers have preinstalled CD-ROM drives. Although



Software Star A good price, speedy CPU and bus, and stellar software bundle highlight the Apple Power Macintosh 6500/225.

STORAGE			EXPANSION		NETWORK		COMMENTS		
ard ive	CD-ROM Drive	Zip Drive	Case	Free PCI Slots	Modem	Ethernet	Pros	Cons	Ideal Users
2GB	8×		desktop	2		●	Good price, 2 PCI slots, upgradable VRAM, 3 RAM slots	Proprietary DIMM slots, not enough RAM, slow bus	Small businesses, home offices
B	12×		all-in-one	0		●	Built-in monitor, speedy	No PCI slots, not much VRAM, sold only to education market	Schools, students
6GB	12×	●	tower	2		●	Affordable, speedy, fast bus, great software bundle	Accepts only 7-inch PCI cards, VRAM not expandable	Home offices, cross-platform users, publishers
B	12×	●	tower	2		●	Lots of RAM, high-capacity hard drive, speedy, great software bundle	Pricey, accepts only 7-inch PCI cards, VRAM not expandable	Small businesses, Web surfers
B	24×		desktop	3	●	●	Extremely fast 750 CPU, expandable	Price may be too high for some	Power users on a budget
B	8×		desktop	2	[D]	[D]	High-capacity hard drive, good price	No built-in connectivity, slow bus	Do-it-yourselfers who want a base system
3GB	24×		desktop	2		[E]	High-capacity hard drive, good price	VRAM not expandable, slow bus	Do-it-yourselfers who want a base system, small businesses
2GB	8×		tower	3	●		Good price	Not much RAM or VRAM, low-capacity hard drive, slow bus	E-mail users, students, infrequent users
B	12×		tower	3	●		Good value	Not much VRAM, VRAM not expandable, slow bus	Home offices, e-mail users, students
B	12×		tower	3	●	●	Speedy bus, large cache, high-capacity hard drive	Not much VRAM, VRAM not expandable	Small businesses, home offices, publishers, Web surfers
B	12×		tower	3	●	●	Speedy bus, fast CPU, large cache	Pricey	Small businesses, home offices, gamers, publishers
1GB	8×		desktop	4		●	Fast 604e CPU, fast bus, free RAM and PCI slots, upgradable VRAM	Not as fast as comparably priced system with 750 CPU	Gamers, publishers
B	24×		desktop	3	●	●	Fast 604e CPU, fast bus, free RAM and PCI slots, upgradable VRAM	Not as fast as comparably priced system with 750 CPU	Gamers, publishers

world application performance. Scores are relative to that of an Apple Power Macintosh 7100/80, which has a SpeedMark score of 1.0. [C] Preproduction model. [D] Available with Ethernet or a modem for

A LOW-COST–MAC SHOPPING LIST

Your quick-reference guide to Mac options



CPU type	PowerPC 603e; 604e or 750 if you can
Processor clock speed (MHz)	180MHz or faster; don't pay a premium for a small speed bump
Bus speed	faster than 40MHz
Cache	at least 256K
RAM	24MB or 32MB
VRAM	2MB, preferably upgradable to 4MB
Hard drive	at least 1.2GB; consider getting 2GB
Monitor	15-inch; 17-inch if you're a gamer or publisher
CD-ROM drive	8×; don't pay a premium for a faster drive
Printer	none; a color ink-jet if you really need to print
PCI slots	at least one
Free RAM slots	at least one

most Macs are sold with an 8× CD-ROM drive, don't be fooled by the speed ratings. The cost of upgrading to a faster CD-ROM drive just isn't worth it—the speed differences aren't particularly noticeable.

Communications Some computers include built-in communications capabilities, such as a modem, Ethernet networking, or both. If you plan to physically link your computer to a network, you can either buy a Mac with built-in Ethernet or add it via an expansion card (about $100). If your computer is going to live by itself and communicate only with a printer, you don't need Ethernet at all. If you're planning to use your Mac for connecting to the Internet or an online service, be sure to get a 28.8-Kbps or faster modem. Unless you're an Internet power user, you probably don't need to pay extra for a 56-Kbps modem.

Software Packages Consider the quality and quantity of a system's software bundle if you're looking to beef up your software library. First-time buyers should pay special attention to which programs are bundled, so they can be up and running as soon as they plug in their Macs.

Printer If you're strapped for cash, don't buy a printer right away. In the age of e-mail and electronic correspondence, generating hard copy may not be necessary. If you do need to print, consider getting a color ink-jet printer (about $300). For more detailed information about printers, see "Print It," November 1997.

One to Grow On

At this stage, your new computer system is almost complete—for now. But in the future, when you've got more money to spend, you may want to expand your system. Be careful not to paint yourself into a corner before the computer is even out of the box.

Form Factor Deciding between a tower and a desktop Mac depends on how you want to configure your workspace and how much expandability you require. Tower systems are usually more expandable and can be stowed under a desk. Desktop systems generally offer fewer upgrade opportunities, including fewer free RAM and PCI slots. A desktop Mac fits neatly under a monitor and often acts as an excellent monitor stand. (If you buy a tower Macintosh, be certain to buy a monitor stand as well.)

PCI Slots The number of free PCI slots dictates how many add-ons your Mac can accommodate. Be wary of a system with no available slots—it'll be a nightmare to upgrade. And don't confuse the total number of slots with the number of free slots; some vendors fill up every slot with video cards and other options.

RAM Expansion It's wise to have free memory slots for adding more RAM to your Mac in the future. Don't buy a computer with no free RAM slots, because then you'll have to replace your existing RAM instead of simply adding to what you've already got.

Santa's Helpers

OK, now you know how to get a Mac that suits your needs—and your budget. Next you need to find somewhere to go shopping.

Right now Apple and Umax don't sell directly to customers—to buy one of their systems, you have to go through an authorized dealer. If you're not having much luck at resellers such as CompUSA or MacFrugal's, browse some catalogs. In many cases, you'll find an even better deal if you purchase a Mac via mail-order. And it's always smart to check out vendors' Web sites for bargains on systems no longer available retail.

Another affordable possibility for holiday shoppers is to check out marked-down inventory from such vendors as Motorola and Power Computing. Substantial price drops on current lines make these computers affordable—but inventory won't be replenished, so if the shelves are empty, you're out of luck.

The Last Word

You wouldn't buy your dad an ugly tie for the holidays, and you wouldn't buy your mom a rock-hard fruitcake. Likewise, don't buy a Mac that won't serve your family well a year from now. With your wish list in hand (for quick reference, be sure to take our "Low-Cost–Mac Shopping List" along with you when you head out to go shopping), you'll be sure to keep yourself and your loved ones happy this holiday season. **m**

Associate editor ALLYSON BATES finds time between shopping sprees to cover Mac systems for *Macworld*.

EDITORS' CHOICE

With the imminent arrival of Apple's new $1,999 Power Macintosh G3 (see "Apple's Next-Generation Systems," in this issue), we can't currently recommend any particular low-cost Mac. If the G3 is as speedy as our preliminary tests indicate, the new Power Mac willl clearly be the best Mac you can buy for less than $2,000.

However, if the presence of machines that use the G3 leads to big price cuts, the other Macs we looked at might become even greater finds for bargain-hunters. Apple's Power Macintosh 6500/225 and Umax's SuperMac J700/180 are solid systems that would be great values if their prices were to drop in reaction to the introduction of the Power Mac G3.

REAL PRODUCTS REAL RATINGS

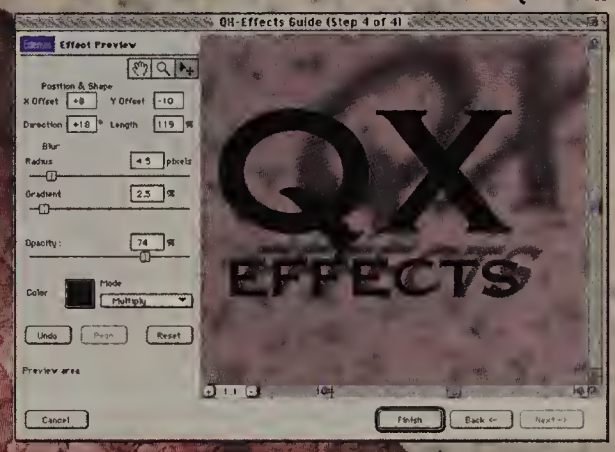
Reviews you can trust Unlike other publications, *Macworld* rates only final shipping products, not prototypes. What we review is what you can actually buy.

DO IT IN A PLACE YOU'VE NEVER DONE IT BEFORE.

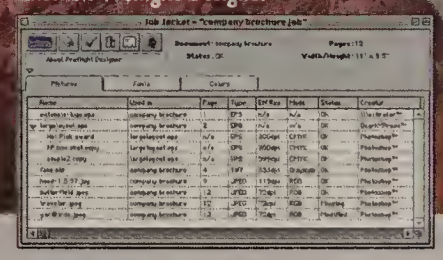


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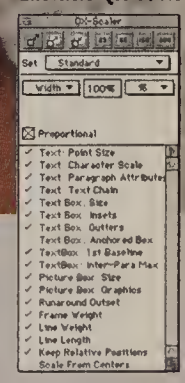
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TREAT YOUR FRIENDS (OR YOURSELF!)

EVEN IF YOU CAN'T AFFORD THE EXTRAVAGANT GIFT of a new Mac, there's still a whole sackful of ways to brighten the holiday season of the Mac fanatics on your list. *Macworld*'s elves braved the holiday weather searching for the coolest gifts, so you can spend your time decking the halls of your home office with gadgets and goodies, transforming it into a wired winter wonderland. After the other presents have made their ways deep into drawers and to the back of the cupboard, these gifts will delight your favorite Mac lovers well into the new year.

Groovy Ghoulies

AWESOME ANIMATED MONSTER MAKER ★★★/5.0

What's green and red and has six legs? Beats me . . . but I just built one, using the Awesome Animated Monster Maker. This CD-ROM lets kids ages 3 and up create the monster of their dreams (or nightmares) by assembling wiggling pieces, using a "color bath" to select its color scheme, and endowing their creation with one of six personalities via a brain transplant. It can take a while to get the hang of the way the laboratory works, but its proprietor—Dr. Lizardlips—and other critters keep up a wisecracking banter (poor sound quality can make them hard to understand, though). For kids with good reading skills, printed tips appear while different sections load. With your monster complete, you tour a 14-room palace, accessorizing your creature with clothing; changing its body parts; assigning it new personalities, moods, and animated actions; and playing games. Game rooms such as Part Drop and Judo require good hand-eye coordination; Spaghetti & Meatball's Kitchen works on memory, spelling, and typing skills. My favorite room is the Sewer, where your monster watches an interactive concert; you click on the musicians to make them play their riffs. You can print your monsters in full-color glory (or is that "gory"?), make coloring-book versions with just the outlines, or export your creations as graphic files.—KATHERINE ULRICH

Houghton Mifflin Interactive, 617/503-4800, www.hminet.com; $35.

An Instant New You—Sort Of

COSMOPOLITAN VIRTUAL MAKEOVER ★★/3.1

Oh, the girlish glee! At last, a CD-ROM that speaks to the frivolous and frolicsome female in all of us and offers a way to experiment with hair and makeup without lasting consequences. Unfortunately, after wrestling with Cosmopolitan Virtual Makeover, you'll want to pull your hair out, not restyle it. Too bad, because it's based on a great premise: You import a digital photo of yourself and try out dozens of different haircuts, hair colors, and eye colors. You can fix your face with virtual foundation, eye shadow, and lipstick in real Cover Girl shades. You can even add beauty marks and tweeze your eyebrows into pixel-perfect arches. Alas, Virtual Makeover is painfully, horribly slow; your hair may go gray before you get to see yourself as a virtual blond. Other deterrents to girlish fun include cheesy music and the program's tendency to choke on imported photos. When all is said and done, it's just

no replacement for being invited to a *Ricki Lake* makeover special.—BROOKE WHEELER

SegaSoft, 888/734-2763, www.virtualmakeover.com; $40.

Countdown to Christmas

SANTAZIA ★★★/5.4

When I was a kid, advent calendars helped ease the countdown to Christmas, rewarding my patience each day with a new picture. Santazia, a computerized version of the old favorite, rewards players with daily 3-D animations and games. Santa, who narrates in your choice of 10 languages, needs you to find 24 enchanted objects in his castle to undo the hex that threatens Christmas deliveries. QuickTime VR lets you smoothly navigate the castle rooms, and sounds—such as creaking doors, dripping water, and crackling fires—mark your movements and location. Once located, the enchanted Old World–style objects come to life with contemporary flair: tabletop trees play soccer with an ornament, candy canes slink like charmed snakes, and rotund ornaments tire after a tribal jive. Individual games (which include memory, matching, and scenic



Santazia By Christmas Eve, you'll uncover 24 animated objects and their accompanying games.

puzzles) offer no spoken or written instructions, but figuring them out adds to the challenge. Santazia doesn't really make Christmas come quicker, but it makes the wait more fun.—ELIZABETH DOUGHERTY

Caspari, 203/888-1100, www.metronome.dk/santazia/; $30.

As the World Turns

3D ATLAS 98 ★★★/6.3

If anyone on your shopping list spends hours spinning a globe or thumbing through an almanac, 3D Atlas 98 is sure to be a year-round favorite. With this innovative CD-ROM, it's easy to make a chart of two statistics, such as comparing the number of goats in a country and its per capita gross national product. You can view an image of a globe in physical relief or with country borders indicated, adding cities, mountains, rivers, and other points of interest as you choose. Most statistics are current as of 1994, and borders and country names are up-to-date—listing



3D Atlas 98 This innovative CD-ROM takes countries' statistics and maps well beyond the two-dimensional world of reference books.

Congo-Kinshasa instead of the recently out-of-date Zaire, for example. Web integration provides links to sites related to a topic or country, and QuickTime movies illustrate countries' historical events, as well as geological, environmental, and climatic features. Pleasant background music and voice-overs accompany many of the CD-ROM's screens. Whether you've got wanderlust or just want to know more about your world, this CD-ROM will do the trick.—KEITH MITCHELL

Creative Wonders, 650/482-2300, www.creativewonders.com; $30.

No Mere Magic 8-Ball

MULTIMEDIA I CHING ★★★★/7.0

This disc serves up a gracious and comprehensive course in the ancient oracular system known as the Book of Changes. The texts conjoining the I Ching's 64 hexagrams are at once precise and poetic, pithy and prodigious, and have provided Confucian and Taoist scholars with cosmic insights for three millennia. Virtual seekers will likely prostrate themselves before Multimedia I Ching's sacred ambience of warmly lighted reading rooms and sweet, caressing music. After you place a question before the Oracle, the



Multimedia I Ching The Oracle Pavilion offers a tranquil setting for you to consult the Book of Changes.

disc prompts you to select a divining method for building a hexagram. (The coin throw is most hypnotic.) The reading screens are especially easy on the eyes and contain full texts of the images and interpretations behind each hexagram. Reading rooms offer a wealth of other information, including voice-recorded lessons in pronunciation, and all aspects of this quiet refuge—its sound, music, and imagery—can be easily customized.—MARK BAARD

Princeton University Press, 800/777-4726, www.pup.princeton.edu; $50.

Roll with It

EXOTIC SUSHI ★★★★/7.7

Whether you take sushi seriously or pop tekamaki by the handful, the Exotic Sushi CD-ROM makes a perfect gift. It teaches you how to prepare four types of sushi, starting with party rolls and eventually helping you graduate to the most difficult type, nigiri. Even more important than the preparation directions are the tips on enjoying sushi. You'll



Exotic Sushi In addition to teaching you sushi-bar etiquette, this CD illustrates the construction of edible masterpieces.

learn insider information such as locating the tastiest part of the yellowtail and determining which sushi is ruined by dipping in soy sauce. The CD-ROM's video demonstrations make it easy to learn the customs they don't teach you at the local sushi bar.—NANCY PETERSON

Bandai Digital Entertainment, 714/816-9700, www.bdec.com; $30.

Make It and Bake It

SUPER JEWELRY KIT ★★★★/7.1

With a little help from your Mac and your printer (and your oven), you can design and create custom jewelry. Super Jewelry Kit comes packed with all the supplies needed to make funky earrings, cool necklaces, beaded bracelets, and wildly colorful pins. Its animated interface helps you select pieces, add hues and patterns, and even type personal messages. Within minutes, you can transform a simple earring design into a unique creation of psychedelic swirls, floral decorations, and checkered patterns.



Super Jewelry Kit With an oven and a color printer, you can use your Mac to design and create one-of-a-kind wearable art.

If you have a scanner or a digital camera handy, you can easily convert your favorite photo into a beautiful brooch. If you get stuck, Max the Multimedia Mutt will talk you through each step, and once your design is complete, you simply print the image to special print-and-shrink paper, cut out your masterpiece, and pop it into the oven. This fun kit eats up a monstrous 14MB of RAM, and although Super Jewelry Kit is intended for ages 8 and up, it requires some adult supervision for threading the special paper into the printer and using the oven.—ALLYSON BATES

Print Paks, 503/295-6564, www.printpaks.com; $25.

Smoke 'Em If You've Got 'Em

THE CIGAR COMPANION INTERACTIVE 2.0 ★★★/6.0

Ask any cigar smokers what to drop in their stockings, and you'll probably get the names of a few esoteric (and expensive) stogies, a plea for silver-plated accessories, or a wistful wish for a humidor. If you don't want to encourage the actual *smoking* part of the hobby, your favorite puffer can still peruse text, audio, and QuickTime movies about cigars, from the history of tobacco and how it's grown to guided tours of a modern cigar factory and the assembly process. The Cigar Companion features a database of the most-pop-



The Cigar Companion Interactive Cutting and lighting tutorials help you learn the esoteric skills of a true aficionado.

ular brands and lets you create your own dossier of cigars you've smoked. The database also contains basic information about the character of the various cigars, but don't buy the disc expecting thorough reviews. If you can't bear the thought of a subscription to *Cigar Aficionado*, here's a gift the cigar smoker in your life can enjoy . . . without stinking up the house.—CAMERON CROTTY

Inroads Interactive, 303/444-0632, www.inroadsint.com; $20.

Up, Up, and Away

VIRTUAL WINGS ★★★★/8.2

By modeling the French Aerospatiale Tobago training aircraft, and including actual Jeppesen airport approach and facilities diagrams, Virtual Wings brings low-cost, realistic flight to the Mac, accurately simulating both instrument and visual flight to hundreds of U.S. and Italian airports. It renders 28 geographic locales, optionally augmented by QuickDraw 3D accelerator cards, such as Apple's QD3D Accelerator or ATI's Xclaim VR. For realistic training conditions, the program depicts haze and surface textures, city



Virtual Wings This unique flight simulator lets you fly a realistic model of a general-aviation aircraft.

lights at night, highway traffic, cloud conditions, gusty winds, and wind shear. An instructor's console lets you simulate partial and full instrument failures and adjust weather conditions. Virtual Wings' out-the-window view is stunningly beautiful, all instrument indications are very realistic, and the program's library of preconfigured settings lets you experience a range of flight situations. Although the simulator is designed for serious pilots, Virtual Wings' clear user guide explains aircraft operation well enough that anyone can enjoy the program. Combined with an external flight control stick—such as one from CH Products, ThrustMaster, or Gravis—it's sure to please the heavenly-minded on your holiday gift list.—MEL BECKMAN

CAT III Systems, 800/322-8866, www.cat3.com; $119.

Uncle Jerry's Disc

THE PSYCHEDELIC BUS OF DEAD KNOWLEDGE ★★★/6.5

How many musicians were involved in the making of the Grateful Dead studio album *Terrapin Station*? What type of bird is mentioned in "Sugar Magnolia"? If you know the answers, chances are you're a Deadhead and that you'll enjoy The Psychedelic Bus of Dead Knowledge, a CD-ROM trivia game. The questions don't focus exclusively on the music but also pertain to the band's friends and influences. Users might be asked to listen to an audio clip and determine which live or studio album it hails from, or pinpoint which Ken Kesey essay includes references to the Dead. Fans will love the audio clips (many of which come from the band's greatest live performances), and the trivia is interesting and well researched. The QuickTime video segments are grainy, and the CD-ROM just isn't slick enough to merit its price, but tour-deprived Deadheads may find the opportunity to flex their band knowledge, wax nostalgic, and do the signature Deadhead bop to a great live version of "Brokedown Palace" well worth the price.—KRISTIN BALLEISEN

Cosmic Light Computing, 804/823-7766, www.psychedelicbus.com; $50.

Classy Case and Stylish Stylus

PALMPILOT ACCESSORIES ★★★/6.9

Many a good little geek found a Palm Computing PalmPilot (see "Top Pocket Organizers," September 1997), among the brightly wrapped packages last holiday season. If one of those lucky folks is on your list this year, you can help bring their merriment back for another season with selections from the PalmPilot accessories catalog. If a plastic stylus is just too ordinary for your favorite PDA junkie, you might favor a Cross DigitalWriter, a stylus replacement that looks just like the famous pens, available in 10-karat gold, chrome, or black lacquer. Posh luggage purveyor Dooney & Bourke offers a full line of "all-weather leather" cases specially made for the PalmPilot, from a slim, fold-over sheath to a large-format, planner-style portfolio complete with a real (paper!) notepad; all three come in your choice of black, tan, or ivy leather. Sure, there are cheaper trinkets to stuff into a stocking, but nothing's too good for your favorite PDA.—ANITA EPLER

PalmPilot Accessories, 408/848-5604, www.palmpilot.com. DigitalWriter stylus, $30 to $65; Dooney & Bourke cases, $50 to $100. **m**



PalmPilot Accessories For people who can't bear to be separated from their PDAs, these accoutrements make super gifts.



CONSUMERS HAVE A VERY DIFFERENT ATTITUDE WHEN IT COMES TO DOING BUSINESS ON THE WEB.

Whether it stems from a sensational story heard on the nightly news or simply a natural fear of the new and unknown, consumers don't trust cyberspace to protect their privacy.

In fact, about 70% either leave a website or report false data as soon as a request for personal information is made online.

However, a study by the Boston Consulting Group shows that if the privacy policies of sites were disclosed, users would be two to three times more likely to give information and partake in Web transactions. Which would result in a doubling of consumer e-commerce from $6 billion to $12 billion by the year 2000.

So how can you earn consumer trust on the Web? Become a TRUSTe licensee. Then with just a click on your website's TRUSTe symbol, users will be able to easily access your privacy statement. The TRUSTe initiative also assures consumers that sites which use our symbol are routinely monitored to ensure displayed information is correct and complete.

To find out more about how to become a licensee, visit our website. After all, earning consumer trust is simply good business.

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Secrets

Calmly Coping with File Disasters

HOW TO CURE YOUR MAC WHEN IT GETS THE DIGITAL HICCUPS

by Joseph Schorr



The other day, I realized that I prefer my Macintosh to a Windows 95 machine not because of the Mac's vastly more intuitive operating system, or its seamlessly integrated multimedia capabilities, or its beautifully refined interface, but because of the way it crashes, hangs, freezes, and otherwise misbehaves. That's right. I'm most grateful to be a Mac user not when everything on my system is humming along perfectly but when I encounter an unexpected glitch that needs fixing.

Mac magazines like this one are filled with pages of Mac-versus-Windows speed tests and price comparisons, but in my opinion, the real test should be what happens when something goes wrong—when the hard disk becomes unreadable, or the printer drivers become corrupted, or critical files get misplaced or deleted. When disaster strikes, I'd rather have a Mac, which is eminently easier to troubleshoot and fix.

Of course, I'd really rather have a system that runs flawlessly, that *never* corrupts a file and *never* quits unexpectedly. But let's face it, there isn't a computer out there—regardless of the platform—that doesn't experience its share of problems. Life with computers is inherently filled with disaster. If you want to stay productive, the key is knowing how to cope with these glitches effectively—without calling technical support or spending money on unnecessary software, hardware, or consultation fees.

Few of these glitches, though, are as disastrous as they initially seem. This column isn't meant to be a comprehensive troubleshooting guide, but here are a few of my favorite coping strategies for some of the odd little problems that could potentially ruin your workday.

Bad-File Crisis

It doesn't take much for a file to go bad. One magnetically zapped bit of data can cause enough damage to render a whole file unopenable. In reality, though, most of the data trapped in a corrupted file is probably OK and can be recovered—if you can get to it. So if a file refuses to open when double-clicked, or crashes your program whenever you try to launch it, you may still be able to pry it open using a another program such as a word processor to recover text.

For example, if a QuarkXPress document won't open because of corruption, you can force it open with Microsoft Word. Launch Word, use the Open com-

continues

mand, and change the List Files Of Type pop-up menu to All Files. Select the QuarkXPress file, and open it. You'll see a lot of garbage, to be sure, but in the file, amid the rows of garbage characters, you'll see every word of text contained in the document. Rescue it by copying and pasting it back into QuarkXPress.

For even more-effective text recovery, use a tool such as the $29 RescueTxt, from Abbott Systems (914/747-4201, www.abbottsys.com), an indispensable utility for searching for lost text. RescueTxt reads disks directly, completely ignoring the Mac OS's file system. In other words, it sees everything on your disk—including files that you've trashed—block by block. Recovering text in this way can be tedious, but if you're desperate, RescueTxt can retrieve a name, a phone number, or a brilliantly constructed sentence that would otherwise be lost forever. (Abbott Systems' $39 CanOpener is an even more powerful text-recovery tool that has gotten me out of many a difficult situation.)

Bad-Disk Crisis

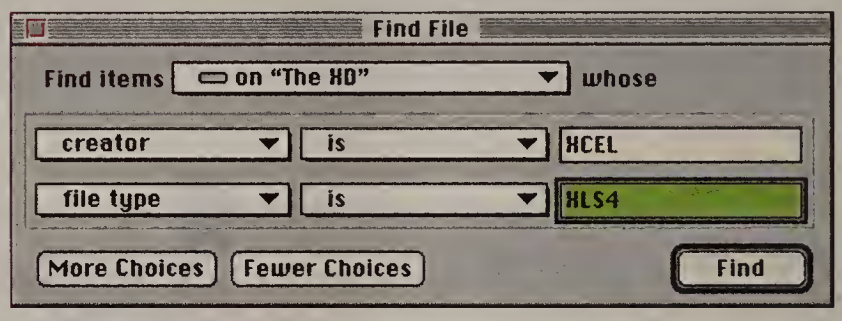
When a disk comes up as "unreadable," don't panic. Unreadable disks usually contain readable files; it's just the disk's directory information that's become scrambled. In other words, the map that the Mac uses to locate specific files on the disk is gone—or at least is mangled. Without a directory map, your Mac loses track of what files are on the disk and decides that it's unreadable.

Your first line of attack should be to run Disk First Aid, the free repair utility that came with your Macintosh (it's either on your Disk Tools disk or your system software CD-ROM). Disk First Aid isn't as powerful as other, commercial disk-repair programs, but it can repair minor directory glitches and, at the very least, let you know if a more serious repair is necessary (see "Free First Aid"). To fix major glitches, you might need a program such as Symantec's Norton Utilities 3.5 ($99; 310/453-4600, www.symantec.com), which can fix disks beset with even major problems. (It can also retrieve files from disks that are so mangled that they can't be fixed.)

If your problem disk is a floppy, the solution may not even require a repair utility. Try ejecting the disk and reinserting it several times; simply reinserting the disk may take care of the problem. If not, take a close look at the disk. Is the metal shutter even slightly bent or out of line or a bit sticky? That's enough to cause the Mac to reject the disk. The solution? Just rip the metal shutter off and pop the disk into your Mac without it; it'll work just fine. Of course, the mangled floppy, with its Mylar platter exposed, can no longer be used for reliable storage, so copy the files you need from the disk and then get rid of it. You've lost a floppy but saved your files—and possibly your workday.



Free First Aid Disk First Aid isn't a powerhouse application, but it can verify and make minor repairs on uncooperative hard disks and other storage media, including floppies and removable media.



Breaking the Code To reveal a file's hidden type and creator codes, drag the file to the Find File window. Armed with these codes, you can use ResEdit to restore a file that's lost its identity.

Unknown-Application Crisis

You've probably seen this: A standard document, such as a Microsoft Excel file, suddenly stops looking like an Excel file in the Finder, its original icon replaced with a generic document icon. When you try to launch this file, you don't get Excel; you get a message that says the document could not be opened because the application program that created it could not be found. Or the Mac launches some other program completely—one that's not able to open the file.

What's going on? The file is suffering from type- and creator-code amnesia. Every file on your Mac is identified by a four-character type code and a four-character creator code. These hidden codes tell the Mac what kind of file it is—whether plain text, PICT file, or QuickTime movie—and what program was used to create it. When these codes get zapped, as they sometimes do in a crash, a file essentially forgets what it is and where it came from.

There are a couple of ways to restore these codes. First, if a number of files on your machine have turned generic, try rebuilding the desktop. The desktop is the Mac's internal database that keeps track of all the files on your system and the icons that represent them. To rebuild the desktop, hold down the ⌘ and Option keys while restarting your Mac.

To fix type and creator codes on individual files, you can use ResEdit, Apple's free resource-editing program. Launch ResEdit, and then use the Get File/Folder Info command from the File menu to open the afflicted file. Type the correct codes in the Type and Creator fields, and then save the file. To be safe, it's a good idea to try this ResEdit solution on a copy of the file. If all goes well, you can throw away the corrupted original.

If you don't know the correct codes, first use ResEdit to open a normal file of the same type as the one you're trying to fix; you'll be able to see the codes. (These codes are case-sensitive, so copy them exactly as you see them.) Alternatively, you can drag a normal file onto the Find File window, with File Type and Creator selected as the search criteria; the codes will appear in the appropriate fields (see "Breaking the Code"). **m**

JOSEPH SCHORR is the author of *Macworld Mac Secrets*, fourth edition (IDG Books Worldwide, 1997). He handles Mac crises and near-disasters on a daily basis for a trade-magazine publisher.

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Quick Tips

Tips, Tricks, and Shortcuts

by Lon Poole

Already filled the bottom of your Mac OS 8 desktop with pop-up-window tabs? Or got a pop-up window with a wide tab due to a long name? Steven M. Alper (Jackson Heights, New York) has discovered an easy way to shrink tabs. Grab a tab you'd like to shrink, and drag it up until its pop-up window becomes a regular window. Now position some remaining tabs about ½ to ¾ inch apart. Click on the title bar of the window you want to make a pop-up with a shrunken tab, and drag it between the two tabs until you see it change to the outline of a tab. Although this outline shows the full tab width, when you release the mouse button, the tab shrinks to fit the space available. The tab remains shrunken if you drag it to a new position along the bottom of the screen.

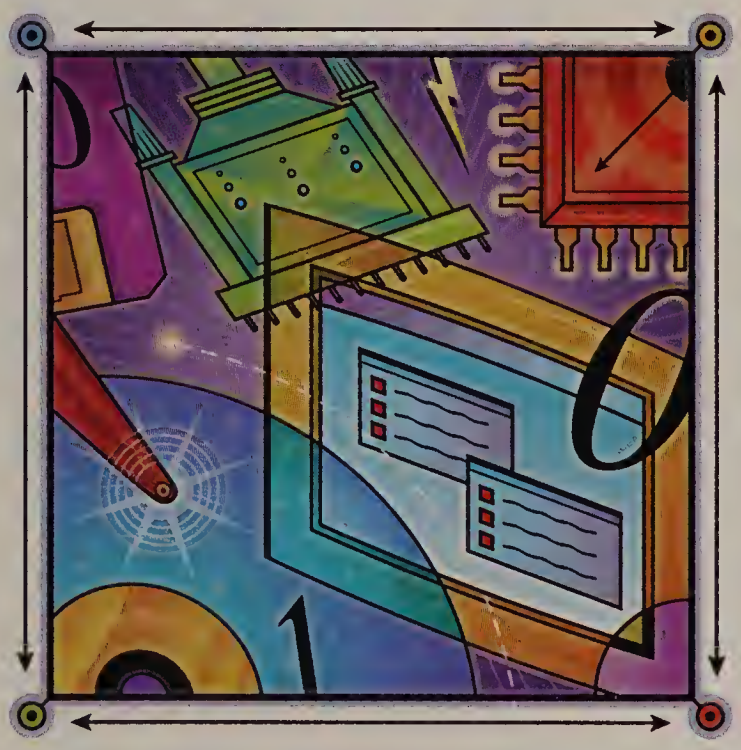
You can adjust the position of any tab (shrunken or full-size) relative to its window by opening the window and dragging the size boxes at the top left and right corners. The tab stays put as you move its window beneath it.

Grandfather Patterns

Q. After I upgraded to Mac OS 8, my favorite desktop pattern (the yellow/green airbrush look) still adorns my desktop but is not part of the set of patterns available in the Desktop Pictures control panel. I would like to experiment with this control panel, but I don't want to lose my favorite pattern. I know this pattern exists somewhere on my PowerBook's hard disk. Where is it? And how can I store it permanently, for easy access?

MONTE ABRAMSON
New York, New York

A. Patterns that were included with system-software versions prior to Mac OS 8 are collected in a Scrapbook file named Additional Desktop Patterns on the Mac OS 8 CD-ROM (in the CD Extras folder). You can open this file in the Scrapbook by double-clicking on the file. If you have any trouble opening the file, drag it to your hard disk and double-click on it there. Then, with the Desktop Pictures control panel open, you can drag patterns (or copy and paste them) one at a time from the Scrapbook window to the Desktop Pictures window.



The pattern you want to preserve is in the Additional Desktop Patterns file, but if it weren't, you could still preserve it by using Apple's free ResEdit program (available from www.info.apple.com). You can use ResEdit to copy the current pattern from the System file or any pattern from the Desktop Patterns Prefs file, where available patterns are kept in System 7.5 through Mac OS 7.6.1. (The Desktop Patterns Pref file is moved to the Trash the first time you use the Desktop Picture control panel in Mac OS 8. If you've unknowingly deleted it, get a copy from someone still using Mac OS 7.6.1 or earlier.)

After copying a pattern with ResEdit, you can paste it into the Desktop Pictures control-panel window.

Start by making a copy of your Desktop Pattern Prefs file or your System file and opening the copy with ResEdit. In the resulting resources window, double-click on the ppat icon to display a window of patterns stored in the file. Select a pattern you want to make available in Mac OS 8, copy it, switch to the Desktop Pictures control panel, and paste. Repeat this procedure with as many patterns as you want to copy.

Beyond SimpleText

Q. Often I can't open a document downloaded from the Internet because the document is too big for SimpleText. Even increasing SimpleText's memory size tenfold doesn't help. Why is this, and how can I circumvent this problem?

JOSEF HUEBER
Ingolstadt, Bavaria, Germany

A. SimpleText opens text documents with the help of the Mac OS's text-editing services, which max out at 32K.

You can open a jumbo text document by using the Open command within a word processor or text editor such as Microsoft Word, ClarisWorks, Corel WordPerfect, Nisus Writer, Tom Bender's $10 Tex-Edit Plus shareware, or Bare Bones Software's BBEdit Lite freeware. Or, drag the document icon onto the application icon in the Finder. Applications that support Macintosh Drag and

continues

Drop also let you open text documents by dragging the document icons into the open application window.

These techniques also work with Web browsers, but often with unsatisfactory results. Netscape Navigator and Communicator don't wrap lines to form paragraphs, and Microsoft Internet Explorer ignores line breaks altogether.

Another method is to change the document's creator application in order to have an application besides SimpleText open a double-clicked text document. You can do this using AutoTypers, tiny utilities that execute custom-specified actions, which you can create with the MakeAutoTyper program, included with Daniel Azuma's $10 FileTyper shareware.

A text document dragged onto a suitably configured AutoTyper icon will, for example, change into a Microsoft Word document. Thereafter, the document will open in Word when double-clicked.

A free collection of seven preconfigured AutoTypers called "Change Text Creators" is included with our online shareware offerings.

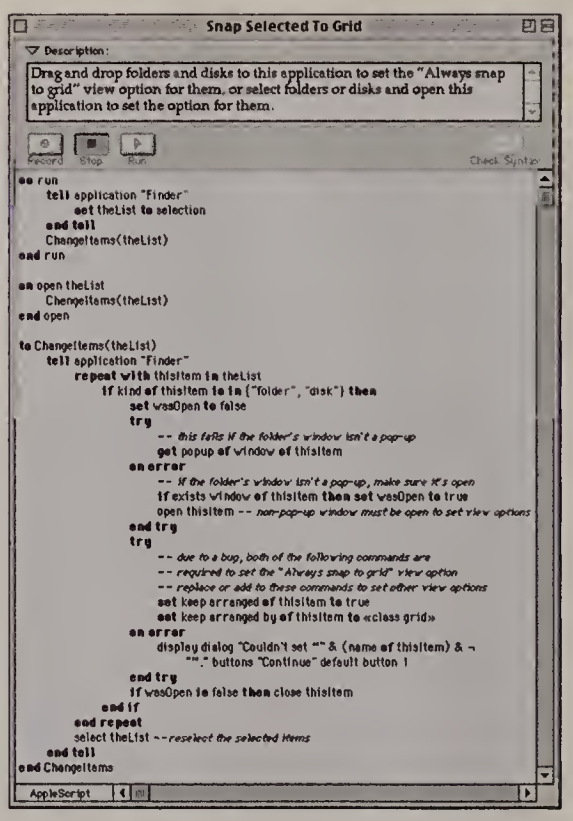
Inherited Attributes

Q. Is there a way to make the Always Snap to Grid option the default behavior for Mac OS 8's View Options command? So far I've had to set this option separately for each folder, which is a hassle. I definitely prefer the old behavior (the now discontinued Views control panel). Am I stuck with this new feature, or is there a way around it?

DAVE TOWNSEND
via Macworld Online

A. One solution is to take advantage of the fact that copies of a folder—in this case, copies of an empty folder—have the same view options as the original folder. Create a new folder, open it, and use the View menu to set its view as you wish. Then duplicate the empty folder (⌘-D or option-drag) on the same disk as an old folder whose view options you want to change, and drag the old folder's entire contents (⌘-A to select all) to the duplicate empty folder. If you drag from an old folder that contains icons you've hand-placed in a particular order, you should open the destination folder and drag all the icons as a group to the destination folder's window rather than to the folder's icon. This preserves the icon ordering as much as possible (the view options set for the destination folder may forcibly reorder the icons). Finally, copy the name from the old, now empty folder, trash the old folder, and paste the name on the replacement folder. Repeat with a new duplicate of the empty folder for each old folder that you want to have the same view options. This procedure is still a lot of work but less so than applying multiple View commands to each old folder.

A second approach is to use the $10 shareware Finder View Settings, by Alessandro Levi Montalcini. You can use it to override all folder-specific view options in Mac OS 8 or to change the view options for a batch of folders.



Scripted View Options This AppleScript script applies the Always Snap to Grid option to the currently selected folder and disk windows. You can type the script into the Script Editor program and save the script in the Automated Tasks folder, setting the Kind option to Application and turning on the Never Show Startup Screen option in the Save dialog box. Then you can use the script by choosing it from the Automated Tasks submenu of the Apple menu.

Another approach is to use AppleScript to set a folder's view options, as shown in the example AppleScript applet (small application) in "Scripted View Options." In addition, Apple distributes a more complex AppleScript that copies the view options of a folder to the folders inside it and optionally to all nested folders. This applet is part of a package you can get from Apple's AppleScript Web site (http://applescript.apple.com/applescript_overview/utility_scripts/UTILITY_SCRIPTS.00.HTML). The AppleScript Web site also has a lengthy technical discussion about scripting all view options, including a listing of the aforementioned AppleScript applet (http://applescript.apple.com/applescript_overview/system8/container_windows.00.html).

Absolute Reference

TIP When creating or editing a formula in a ClarisWorks spreadsheet, you can enter an absolute reference to a cell by ⌘-option-clicking it. For example, ⌘-option-click cell A1 to enter A1. (If you copy and paste a formula or use the Fill command to replicate that formula, absolute references in it don't change in the same way that relative references do.)

HALIM NGAH
Kuantan, Malaysia

Italic Jaggies

TIP Ever notice that the italic style of some fonts looks very jagged on screen but smooth when printed? This happens if there's an italic TrueType (or PostScript) version of the font but no equivalent italic bitmap version. The same sort of problem can affect bold and other styles on screen. For example, the Times font suitcase that comes with the Mac OS contains several bitmap sizes of plain Times together with plain, bold, italic, and bold-italic TrueType Times.

You can improve the appearance of styled text on screen simply by opening the font suitcase (in the Fonts folder) and dragging the bitmap fonts to a folder outside the System Folder. You can tell the bitmap version from the TrueType version by the icon; the icons for the bitmap versions contain only one letter A, whereas those for TrueType fonts have three As. The Finder makes you quit all open applications before you remove fonts from the Fonts folder or from suitcases inside the Fonts folder.

Once you restart the applications, you can take advantage of the new italic versions of the fonts. This tip is especially good for Web surfers—the italic text used on many pages will actually be legible!

RANDY GLENN
Oakville, Ontario, Canada

Better Fax Display

TIP To display on-screen faxes more legibly, the Global Village Fax Center software (bundled with the Global Village TelePort and PowerPort modems) uses a moderate amount of antialiasing. While the preset amount is fine nine times out of ten, text is too blurred in some instances to be legible or more antialiasing is necessary. I've discovered that in these situations, there's a way to increase or decrease the contrast: simply use the up- and down-arrow keys. Changing the antialiasing does not affect GlobalFax OCR's ability to recognize text, nor are the changes reflected in printed copies of faxes.

JONATHAN COWPERTHWAIT
Oakland, California

Web-Page Typography

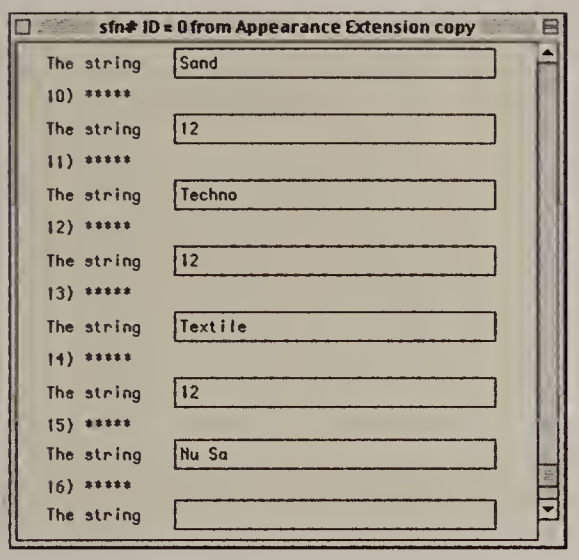
TIP In "Improving Your Web Typography, Part 1" (*Media*, September 1997), Jim Heid mentions using the new **** HTML tag for better font control on a Web page. As a Web-site designer, I find that one of the most interesting uses of **** tags is to combine them with **<pre>** tags for preformatting text. Most designers make little use of **<pre>** tags, because although they give precise text layout, they also result in the text's being displayed as a monospaced font (boring!). But by combining the **<pre>** and **** tags, you preserve both layout and font control. You simply put the **** tags inside the **<pre>** tags, like this: **<pre>Text goes here </pre>**.

DAMEON ROLLINS
via Macworld Online

Jim Heid agrees that this is a cool tip. It lets you control line breaks and spacing simply by typing spaces and hard carriage returns—no need to use codes such as ** ** *and* **
**. *It seems to work fine with Navigator 3.0 and Internet Explorer 3.0.—L.P.*

More System Fonts

TIP You can modify the Appearance control panel to use any font you have installed in your system for menus, dialog boxes, window titles, and so forth. Use ResEdit to open a copy of the Appearance control panel, and then open its MENU resource -4050 (which is initially empty). Choose Create New Item from the Resource menu, and for the new menu item, type the name of an installed font. Save your changes, and close the copy of the control panel. In the Finder,



Add a System Font You can add a font to the system font pop-up menu in the Mac OS 8 Appearance control panel by using ResEdit to modify the sfn# resource ID 0 in a copy of the Appearance extension file. To make the job easier, open the sfn# resource with ResEdit's Open Using Template command and specify the STR# template. Type the additional font name and size in two new fields.

substitute the modified control panel for the original. Now open the modified control panel, choose the system font from its pop-up menu, and restart. Voilà!

PAUL MCGRANE
Livingston, New Jersey

The font you add must be a TrueType font or have a 12-point size installed. And for best results, it should include the special characters that represent the ⌘ key, the shift key, and so forth (a number of fonts don't have these). Also, this method causes the Appearance control panel's pop-up menu to display incorrectly, although it still works.

One possible system font to use is Marty Pfeiffer's free Virtue font (www.teleport.com/~wamozart/fontware.html). Virtue looks like Charcoal but has looser letterspacing like Chicago's, and it comes with an application that patches the Appearance extension (not the control panel) to properly list the font in the system-font pop-up menu.

Another possibility is to use Pfeiffer's $10 shareware Nu Sans Bold 12, which is a clone of the Espy Sans Bold font used for headings and titles in Apple Guide windows. You can get the genuine Espy font from the Apple Guide extension and other places. However, there's little point, because unlike Nu Sans, the real Espy is unable to display key-cap symbols such as ⌘ in menus.

Other system-font candidates include Espi Sans Bold 10 (like Espy), Tecton (like Adobe Tekton), and Veritas 12 (like Charcoal). They're all tweaked for system-font duty and are included with the Kaleidoscope shareware by Greg Landweber et al. (www.macdownload.com). In fact, you can use Kaleidoscope to change the system font to any installed font and size.

If you don't want to add the Kaleidoscope control panel, which modifies your system software during startup, you can add fonts to the Appearance control panel's pop-up menu by using ResEdit to modify the standard Appearance extension file (not the Appearance control panel). With this procedure, the system-font pop-up menu displays correctly.

First make a copy of the Appearance extension and open the copy with ResEdit. Next open the sfn# resources icon. Choose Open Using Template from the Resources menu, and in the dialog box that appears, specify the STR# template. This opens the sfn# resource ID 0 with the STR# resource template. This resource already includes the Charcoal and Chicago fonts plus the following mystery fonts: Chisel, Gadget, Sand, Techno, and Textile. Scroll past all of these fonts to the bottom of the window, click on the last set of asterisks, and choose Insert New Field twice from the Resource menu. This adds two fields to the resource, as shown in "Add a System Font." In the first new field, type the name of the font you want to add, and in the second new field, type the size of the font (use 12-point for best results). Save your changes, and quit ResEdit. Substitute your modified Appearance extension for the original, and restart your Macintosh.—L.P. m

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LON POOLE answers readers' questions and selects reader-submitted tips for this monthly column. His latest book is *Macworld Mac OS 8 Bible* (IDG Books Worldwide, 1997).

Shareware mentioned in *Quick Tips* is available from Macworld Online (www.macworld.com) or America Online (keyword Macworld; use keyword Apple for Apple software).

We pay $25 to $100 for tips on how to use Macs, peripherals, or software. Please include your full name and address, so that we can send you your payment. Send questions or tips to quicktips@macworld.com or to Macworld Quick Tips, 501 Second St., San Francisco, CA 94107. All published submissions become the sole property of *Macworld*. Due to the high volume of mail received, we cannot provide personal responses.

Publishing Workshop

How QuarkXPress 4.0 Will Change Your Life

by David Blatner and Galen Gruman

When people start talking about the big "four-oh," they usually look down in the mouth (unless it's someone *else's* birthday). However, the long-awaited 4.0 version of the world's most popular page-layout program is truly cause for celebration.

Though the engineers at Quark stripped down the program and completely rebuilt some parts of it for this release, at first glance it's still the same program you know and love. Quark's makeover includes general interface enhancements (such as tabbed dialog boxes and more keyboard shortcuts) and two basic types of new features—artistic tools (illustration, image enhancement) and structured-document tools (indexing, tables of contents, multichapter books). Quark rounds out this version with dozens of small additions that add up to major workflow and productivity gains.

This month, we explore some of the most important new features, looking at how they affect the way you do your job. We even throw in some fun tips and tricks for getting the most out of the older-but-wiser XPress.

Bézier Curves

The most exciting new feature in QuarkXPress 4 is the ability to draw Bézier curves. This does *not* mean that XPress now takes the place of Macromedia FreeHand or Adobe Illustrator; for heavy-duty illustration, you still need a dedicated illustration program. On the other hand, how many times have you avoided designs that put text along a curve because it's just too much of a hassle to go back and forth between XPress and another program to make changes? Now you can place text along a curve right on your page; apply any of XPress's typographic formatting to it, including style sheets; and edit it to your (or your client's) heart's content.

While you may not be doing heavy-duty illustration, the drawing tools in XPress 4 are certainly powerful enough for building simple logos. Once you've made one, you can even save it as an EPS file to use in other programs. A Bézier curve can be either a line or a box. If it's a line, you can put text along it; if it's a box, you can put either text or a picture inside it.

Character-Level Styles

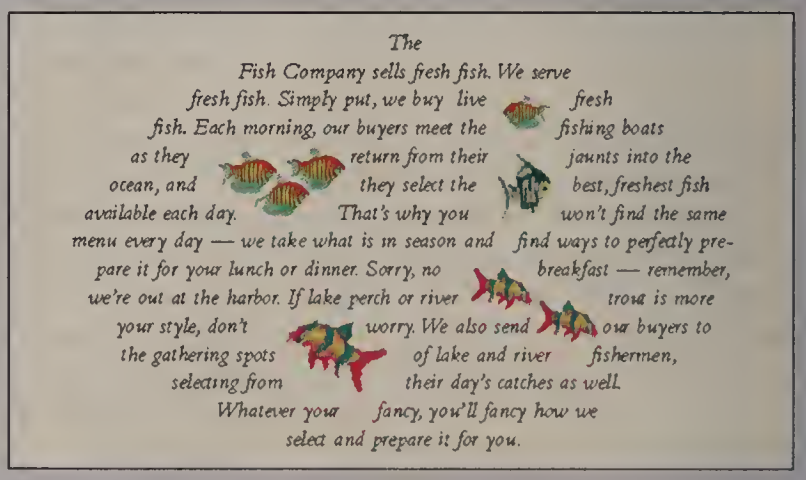
The second most "life-changing" feature in QuarkXPress 4 is character-level styles. For anyone unfamiliar with the concept, a style sheet is a collection of text formatting—font, size, leading, indents, color. There are two great things about style sheets: They let you apply a bunch of formatting with one keystroke or click, and they let you change

Text Wrap

Sometimes, floating small graphics as accents in a sea of text is the perfect way to give a layout some panache. The only problem: Earlier versions of QuarkXPress limited text wraps to one side of a graphic. Version 4 lets you run text on all sides.

1. To wrap text on all sides, you have to go to an odd place: Select the text box, and choose Modify from the Item menu (⌘-M). Go to the Text tab, and check Run Text Around All Sides. (You have to set this only once, even if there are multiple items sitting on top of the text box.)
2. Now, press OK, select the foreground object (the one causing the runaround), and go to the Runaround dialog box (⌘-T).

TIP When you're flowing text around an element, it helps to see how the lines break around it. XPress 4.0's Live Refresh feature makes that easy. In the Application Preferences dialog box's Interactive tab (⌘-Y), turn on the Live Refresh check box. Now, when you drag the foreground object or change the text box's size, wait a half-second after pressing down the mouse button before moving the mouse. The pointer changes to the ✥ symbol; now the text wrap changes as you drag the picture box.



that formatting simply by changing a style sheet's definition. Up to now, a style sheet always affected an entire paragraph. The ability to apply styles on a character-by-character basis is a major leap forward.

You can easily apply separate styles to elements *within* a paragraph: run-in subheads, drop caps, even sentences or words in the middle of a paragraph. If you want every instance of a company name in a brochure to be 12-point Palatino bold, for example, you can apply a character-level style sheet to those words. If you don't like that look, changing the style sheet's definition reformats those words throughout your document.

Even better, Quark has expanded the regular Find/Change dialog box so that you can search and replace style sheets (both paragraph-level and character-level). For instance, if you want to apply a character style everywhere the phrase *new and improved* appears in your document, you can search for all instances of the phrase and automatically apply the style sheet from the Find/Change dialog box.

Clipping Paths

For years people have gotten burned by putting TIFF images into picture boxes with a background of None. The result has always been icky jaggy edges. Quark heard the yelling and fixed it with a robust new Clipping dialog box. For images on a white or near-white background, XPress can build a clipping path for you. For a more complex background, you can create the clipping path in Adobe Photoshop. When you import the image as a TIFF file, XPress not only reads this embedded path but also lets you modify the path. Create multiple paths, and XPress will let you choose which one to display

continues

Shape Your Text

It used to be that you needed Adobe Illustrator or Macromedia FreeHand to create text effects and then export them in EPS format for use in QuarkXPress. No longer. With XPress 4.0, you can make text align to any path—whether a Bézier curve or a straight line. In addition to making text follow a shape, you can even turn text into a shape.

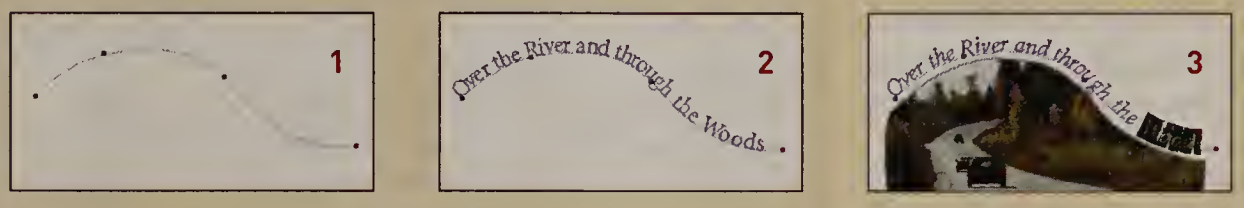
Follow That Path

1. Create a path using one of the four text-on-a-path drawing tools—Bézier, standard line, orthogonal line, or freehand tool.

TIP **You can move tools you use often from their pop-up into the main Tool palette. Press control when selecting the tool. Control-clicking on a tool in the regular palette puts it back in its original pop-up menu.**

2. Click on the Content tool, and then click anywhere on the text path. Start typing.
3. Format your text as you would any other text.

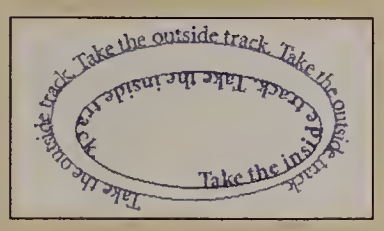
TIP **You can put text on any path. Select the path, go to the Item menu, and choose Text from the Content submenu.**



Follow That Shape

To have text run around a box's shape, create a box by using any of the box tools. Then in the Item menu choose Shape and select the squiggly-line icon, which converts the box into a closed path. Now use Item → Content → Text to convert the path into a text path. If you want text to run around a box's contents, do the preceding steps on a copy of the original box and place that copy on top of the original box.





Now It's Inside, Now It's Out

To get text inside a path (rather than outside the path, which is the default), Choose Flip Text from the Style menu (or click on the Flip Text icon in the Measurements palette).

Now It's Text, Now It's a Box

1. Select anywhere from one character to a full line of text—but no more than one line—with the Content tool. In the Style menu, choose Text To Box to convert the text to a picture box.
2. You can now scale the box like any other box and bring a picture into it. Convert it to a text box, and you can even add text inside your text. Note that even though these letters don't touch, they form a single picture box.

TIP **To break out letters as individual boxes, convert each letter separately. If you've already converted a group of letters and they don't touch, you can still split them apart. In the Item menu, choose Split → Outside Paths.**



and print. You can even use clipping paths to extend part of the clipped image into the layout beyond the picture box.

Long Documents

The long-document market—that is, folks who are creating books, magazines, and catalogs—will love three of XPress 4's new features: Books, Lists, and Indexes.

Books The Books feature lets you identify a group of documents to be treated as a single entity. You can automatically paginate the group so that page numbers run consecutively from the beginning of the book to the end, and you can print the whole thing at once. You can also synchronize the style sheets, colors, and other information among all the documents. The word *book* is misleadingly narrow—this feature is aimed at anyone who is creating manuals, documentation, and other multichapter projects.

Lists At first glance, Lists appears to be just a table-of-contents generator, but it does more than that. It lets you create any sort of list, based on the style sheets you use. You can create, for example, a list of all tables (by creating a unique style sheet for table titles and applying it to each one), an outline (by capturing all the heading styles), a list of headlines, a list of figures, every instance of a footnote, and more. If you can tag it with a paragraph style sheet, you can capture it in a list.

Once you have defined your lists (in the Edit menu, choose Lists), you can generate one with the Lists palette (option-F11). Choose the list you want to generate, position the pointer in the text box where you want to add the list, and then click on the palette's Build button or Update button as appropriate. Note that the page numbers are based on what was true when you generated the list; if you change your document, you must rebuild the list to get the new page numbers.

Indexes XPress 4 handles indexing through an XTension that ships with the product (if you don't need indexing, you can turn it off with the new XTension Manager feature).

To create an index, use the Index palette (in the View menu, choose Show Index). As you go through a document, highlight each word or phrase to be indexed and click on the Add button (red brackets appear on screen around the indexed text). The Scope pop-up menu lets you extend the index to the end of the paragraph, to the occurrence of a specific style sheet, or for a specified number of paragraphs. Scope lets you create index references that traverse a range (for example, "Macintosh, pp. 41–43").

You must index each occurrence of a word or phrase you want your index to include—XPress will not search them out for you. However, you can add words or phrases to the index, even if they don't appear in the document (for instance, you might want entries for *fish sticks*, *popsicles*, and *ice cream* to appear in the index under *frozen foods*, even if that phrase never appears in the text). You can check to see if you used more than one variation for a word (such as *Mac* and *Macintosh*), by scrolling through the palette's list of indexed terms. You can create an index from multiple documents if they're defined as a book, make "see" and "see also" cross-references within an index, and format the text in the index automatically, too.

If you click on the hierarchy triangle to the left of a term, you can see a list of all the pages on which the word or phrase has been indexed. When you're finished with the index, select a text box and in the Utilities menu, choose Build Index to create the actual index.

Color and Printing

Quark is solidifying its position in the color prepress world with XPress 4's color and printing features. The most important of these is the ability to mix spot-color inks into *multi-ink* colors. If you are printing a two-color job with black and red, you can make it appear to be a three-color job by overprinting tints of red and black to form a dark red. It's always been a hassle to create this kind of effect, and you could almost never see a preview of the mixed color on screen. XPress 4's multi-ink feature makes it easy to create

Add and Subtract Shapes

Gaining access to illustration tools doesn't suddenly make you an illustrator. Fortunately, QuarkXPress 4 lets you build complex objects out of simpler ones by using the Merge commands.

There are seven Merge commands in the Item menu; each lets you add or subtract two or more items on your page.



Original shapes

Intersection deletes everything except the parts that are overlapping the farthest-back object.



Intersection

Union groups selected objects into a single object.



Union

Difference acts like a cookie cutter—it cuts out the overlapping object's shape from the background object.



Difference

Reverse Difference is like a cookie cutter, too, but this time XPress cuts out the background object's shape from the foreground object.



Reverse Difference

Exclusive Or combines all the shapes, but it cuts out the parts that overlap each other (this is sort of the reverse of Intersection).



Exclusive Or

Combine is visually identical to Exclusive Or, but where Exclusive Or places corner points at all the intersection points, Combine does not. We often find Combine more useful.

Join Endpoints does just what it sounds like. The open endpoints of two lines (curved or straight) must be close to each other for this to work properly.

and preview these colors.

Mixing colored tints increases the possibility of moiré patterns at print time, so the fact that Quark has significantly revamped the Print dialog box comes as a pleasant surprise. Not only can you print noncontiguous pages (such as 1, 4, 6–8, and 13) but you can also specify halftone settings for each color individually, preview how the page will print, and save sets of Print dialog-box configurations for reuse. Plus, the Page Setup dialog box and the Print dialog box are now two tabs in one dialog box, so it's faster to go back and forth between the two.

If it's the cutting edge you want, you can get that from XPress, too, as it includes Pantone's Hexachrome HiFi color sets (don't forget to pick up a Hexachrome swatch book from Pantone so you can see what these colors look like in print). Hexachrome is a six-color printing process that allows you to achieve some bright colors that you cannot get in normal CMYK printing. Although this is kind of cool, most people will never use it, because HiFi color adds to the cost of the job and does not help the quality of most images.

The great color news of the day is that Quark dropped the EfiColor XTension and now ships XPress with the Quark CMS XTension, based on Kodak's Color Management System and Apple's ColorSync. It's a better-implemented system and provides superior color quality. However, color management is not currently (and may never be) easy; to use the Quark CMS properly is going to take some hard work and some education.

Little Changes Make a Big Difference

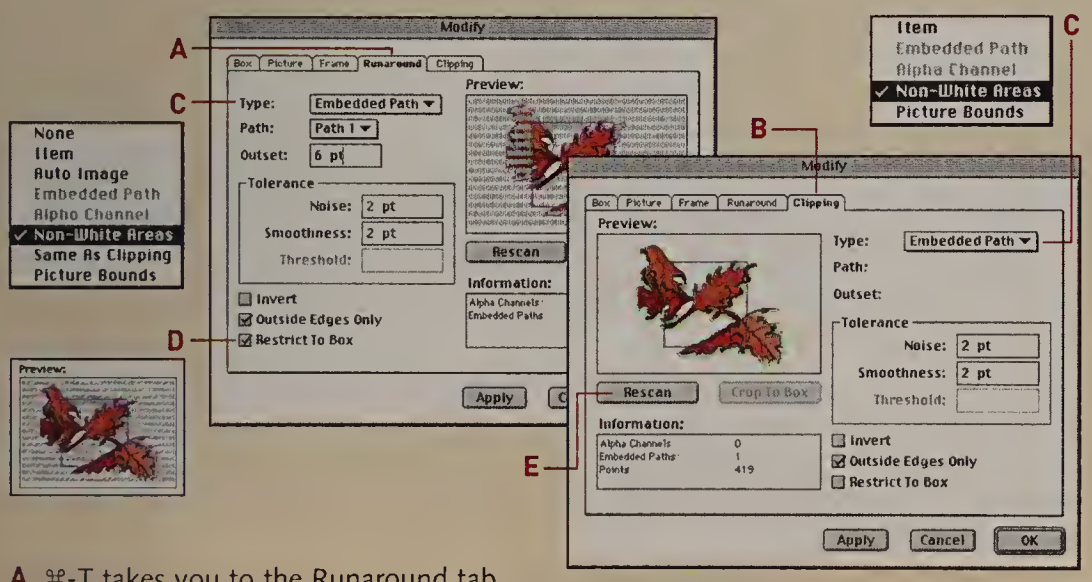
While there are some really big changes in QuarkXPress 4, there are also some smaller, subtler changes that will nevertheless have a significant impact on your working life. One of the coolest little changes is that you can now use either the Item tool or the Content tool to import pictures into a box. In fact, in most cases, it no longer matters which tool you use (you can even select multiple objects with the content tool). Here are some others:

- Zoom to 800 percent view. This is great when you care a lot about your kerning.
- Make your own dashes and stripes. This built-in feature lets you augment the ones that come with the program. These are true PostScript elements, so they look good in print at any size.
- Append elements to documents. The File menu's new Append command lets you bring style sheets, colors, lists, or custom dashes or stripes into your document from another file, even if that file is closed. And you can now select which elements to import—it's no longer all or nothing.
- Interactively scale multiple objects simultaneously. Just group them (⌘-G) and then ⌘-option-shift-drag one of the corner handles of the group.
- Create truly empty boxes. XPress now offers None as a box type. Unlike "empty" text and picture boxes, None boxes

continues

Guided Tour of Clipping Controls

Designers love to snatch objects from a photographic background and plop them down in the middle of a page. It's a fanciful effect that used to require a lot of tedious work. QuarkXPress 4.0 offers much more flexible ways to work with clipping paths; it'll even do some of the tedious stuff for you. You do most of the clipping work in the Modify dialog box. Select an image, and choose Modify (⌘-M) in the Item menu.



A. ⌘-T takes you to the Runaround tab.

B. ⌘-option-T gets the Clipping tab, where you do your fancy text-wrap work.

C. Choosing the Non-White Areas option tells XPress 4 to ignore areas that are white or nearly white (increase the Threshold settings for off-white backgrounds).

D. Uncheck Restrict To Box to display portions of the image that extend beyond the box's current boundaries. XPress can then wrap text around the invisible parts of the image, not just the visible parts.

E. If you make changes to a clipping path but you don't like them, click on Rescan to reinstate the original path.

Clip Tips

- To create silhouettes or masks, import a TIFF file that contains nothing more than a clipping path.
- To save redraw time and avoid some potentially awkward wraps, check Outside Edges Only in the Clipping tab; this ensures that text stays on the outside of an image. Uncheck this option if you want text to fall within an image—for example, if you're wrapping text around a picture of a doughnut and you want text in the doughnut hole, not just around the outside edges.
- If you want your text to wrap around the image's embedded paths, be sure to set the Runaround option to Same As Clipping, so XPress 4 follows the Clipping tab's settings as it wraps the text.
- Fine-tune the clipping path in your layout. In the Item menu, choose Edit → Clipping Path (shift-option-F4), to make the path visible on screen. Now edit it as you would any Bézier curve in QuarkXPress.

don't contain anything, so they're perfect for solid-color backgrounds or shapes. They additionally keep the file size down.

• Interrupt screen redraw. In case your page is taking too long to draw on screen, XPress lets you interrupt the screen redraw with any click or by pressing ⌘-period. (Tip: To force XPress to resume redrawing, press ⌘-option-period).

• Unlimited tab stops. If you make a lot of tables, you'll be happy to know that you can make as many tab stops in a paragraph as you want. Quark is working on a table-creating XTension. Similarly, Tableworks (formerly Npath Software, 425/392-7745, www.tableworks.com) is readying an upgrade, called Entable, to its popular Tableworks table editor that takes advantage of the new tab features.

Always Room for Improvement

Fortunately, while QuarkXPress 4 has the potential to significantly better your page-layout work, it's not going to take too long to learn, because most new features meld seamlessly into the interface that you already know and love. There are many features we'd love to see added to QuarkXPress (for example, basic Web-export capabilities), and some old ones could stand improvement (the interface in the Space/Align dialog box is still horrible, for instance, and the Measurements palette pales in comparison to PageMaker's). Why didn't Quark implement fully functioning contextual menus? And why does XPress still lack a Layers palette?

All in all, this upgrade is a success. It may have been a long time in the making, but now at last we can see why. Some upgrades focus more on adding 3-D buttons and useless bells and whistles. With XPress 4.0, Quark added true functionality that really affects the way you work. **m**

DAVID BLATNER is the author of *The QuarkXPress Book*, fifth edition (Peachpit Press, 1997), and other books. You can reach him at david@moo.com. GALEN GRUMAN, *Macworld*'s editor, is coauthor of *Macworld QuarkXPress 4 Bible* and *QuarkXPress 4 for Dummies* (both IDG Books Worldwide, 1997).

Caution: Saving in 3.3 Format

QuarkXPress 4 includes the ability to save your documents in XPress 3.3 format. While this sounds like a great thing to anyone who has to work with people who are slow to upgrade, it has the potential to make your life miserable. Many of the cool new features in XPress 4 disappear when you save the file as an earlier version. Bézier curves become straight-line polygons; text on a path is straightened out and converted to a normal text box; custom dashes default to normal straight lines; character style sheets disappear (though the text style remains as local formatting); multi-ink colors become RGB colors. In other words, if you use any of the new features, this backward compatibility is disastrous to your work.

Oddly enough, if you save in 3.3 format and later bring the document back to version 4, some features do survive, notably the index entries. So, while it's great that Quark included this feature, you should use it with care.

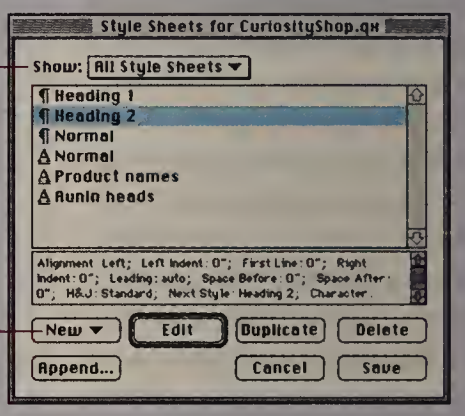
Managing Character Style Sheets

Making a character-level style sheet in QuarkXPress 4 is simple, because Quark has changed the Style Sheets dialog box to accommodate both character-level and paragraph-level style sheets, although it may appear daunting. Here's an easy way to make a style sheet.

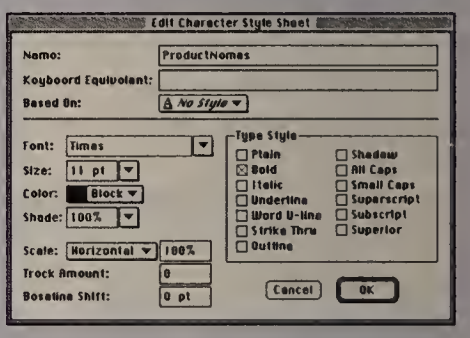
1. Format some text exactly as you want the character style to be. Remember that character style sheets can include only character-level formatting (color, font, size, tracking, baseline shift, and so on). Paragraph-level formatting (leading, indents, drop caps, horizontal alignment) works only in paragraph style sheets.
2. While the text is selected, open the Style Sheets dialog box (select Style Sheets from the Edit menu, or ⌘-click on any name in the Style Sheets palette) and choose Character from the New pop-up menu.

Specify which style sheets appear in this list.

Choose the type of style (Character or Paragraph) you want to create.

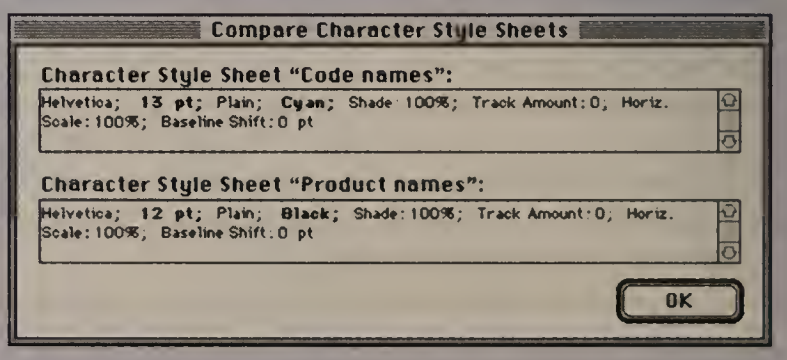


3. Give the style sheet a name. All the text formatting gets sucked into this dialog box automatically. You can still change it by altering the pop-up menus and check boxes in this dialog box.
4. Click on OK, and then click on Save.



Comparing Styles

If you've got two style sheets (either character or paragraph styles) that are similar, XPress can compare them for you. While pressing the ⌘ key, select both styles in the Style Sheets dialog box, and then option-click on the Append button (holding the option key down changes this into the Compare button). The program opens a new dialog box showing each style definition; the parts that are different are in bold.





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Graphics Workshop

Easy Fixes for Common Image Problems

by Cathy Abes

ARTIST David Peters is a photo-illustrator based in Venice, California, whose clients include *Air & Space/Smithsonian* and *Time*. Many of his Photoshop techniques find their way into his digital-illustration classes at Otis College of Art and Design in Los Angeles.

HOW IT WAS DONE Peters has found many of Photoshop's native filters useful for repairing imperfections such as dust, scratches, large-dot patterns, and banding in scanned photographs.

Here, he began by scanning a battered postcard that looked like it had been caught in a mail sorter. Peters first tackled the sky, using Gaussian Blur to soften the worst scratches and the dot pattern; he then blended most of the smaller scratches with Dust & Scratches.

Most effective for the less obvious scratches and dot patterns on the hula dancer's face, arms, and skirt was the application of Gaussian Blur, followed by the Median filter. Using Gaussian Blur alone would have oversoftened the image. Median sharpened the image without bringing back the dot pattern.

Peters then used the Crystalize filter to subtly diffuse the color banding (apparent only in CMYK mode) caused by the gradient fill in the blue circular background. The final step involved cloning out the small white chips that appeared along the background's edge—an unwanted side effect of the filtering process.

TOOLS **Hardware:** Apple Power Macintosh 9500/150 with 132MB of RAM, 2GB internal hard drive, and 1GB external hard drive; 1GB ProMax Iomega Jaz removable-cartridge drive; 21-inch NEC MultiSync XE21 color monitor; Microtek ScanMaker III color flatbed scanner. **Software:** Adobe Photoshop 4.0. m



1 Flaws in the scanned postcard included scratches, scrapes, a large-dot pattern, and an uneven surface.



2 After experimenting with Gaussian Blur at several lower settings, which didn't have enough effect, Peters finally settled on a 6-pixel radius to soften the scratches.



3 Applying Dust & Scratches (a Noise filter) at a 6-pixel radius and a 12-level threshold blended most of the remaining smaller scratches, leaving only the worst surface flaws, which he would later clone out.





7 To fix the residual "chipping" effect of applying the Crystallize filter in a selection, he reloaded the blue circular background selection and cloned from its center to remove the white chips at the outer edge.



4 Blurring the smaller scratches and diffusing the dot pattern on the hula dancer was a two-step process. After drawing a rough-outline selection around the figure, Peters first applied Gaussian Blur with a 1-pixel radius.

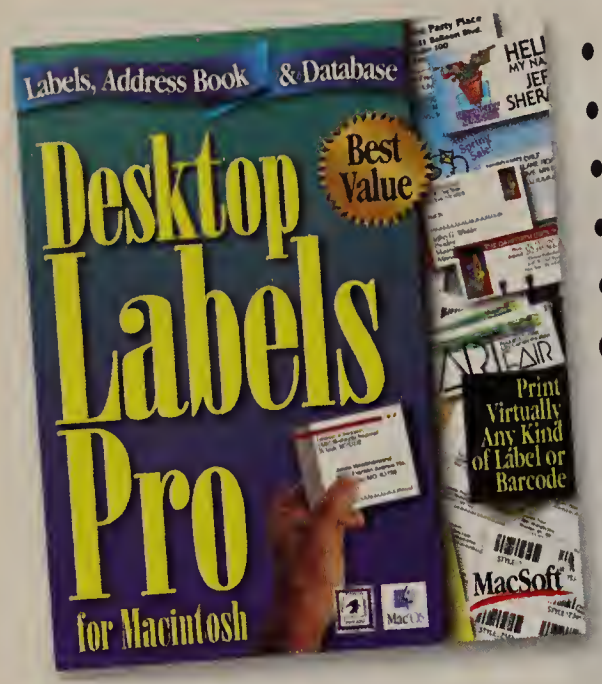


5 To sharpen the facial features without bringing back the dot pattern, he applied Median (another Noise filter) with a low, 2-pixel radius to a 6-pixel feathered selection of the hula dancer. (Although this filter brought back the larger scratches, it made them easier to clone out.)



6 To fix the banding problem (apparent only in CMYK mode) caused by the gradient fill in the circular background, Peters applied Crystallize (one of the Pixelate filters) at a low setting (a cell size of 14).

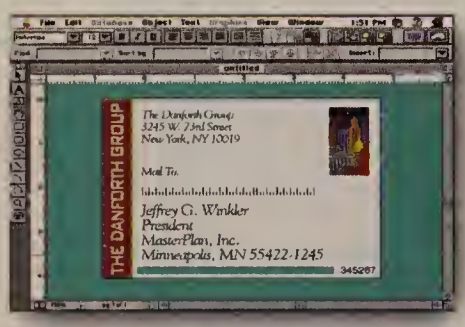
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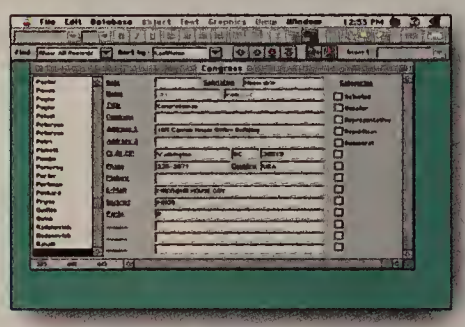
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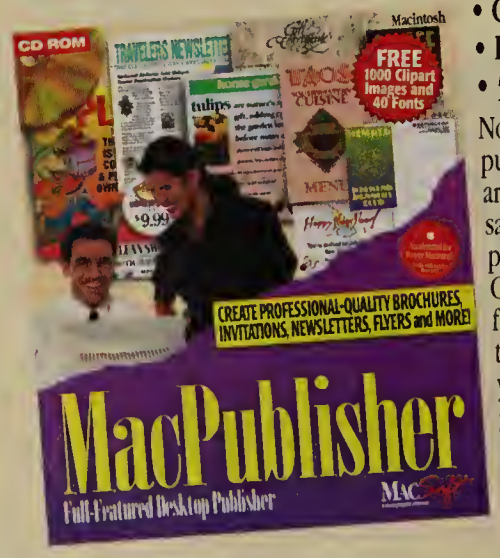


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Circle 39 on reader service card

By Kathleen Tinkel

graphicsuser@macuser.com

10 Typographical Blunders

Nobody dies of bad type, but it could lose you an important client



IT'S ALL TOO EASY to make the kinds of mistakes in typography that distract or mislead readers, make pages hard to read, or look sloppy and amateurish. Fortunately, you don't have to become a master typographer to avoid making such mistakes. You just need to be aware of what makes a page look bad and to know some manual adjustment techniques for fixing the errors. Here are ten of the most glaring errors and advice on how to keep them out of your pages:

1. Rotten Spacing

Holes (large spaces between words), poor *letterspacing* (obvious space between letters), *ladders* (more than three consecutive lines ending with hyphens), and awkward word breaks can ruin the look of a page. Here are some techniques to help you fix such problems:

Change software settings. Changing the default space settings (hyphenation and justification) in your page-layout program can produce the most-dramatic improvement in spacing. Do this before making any other changes to your text. For specifics on changing settings in QuarkXPress and Adobe PageMaker, see the "Key to Better Spacing" sidebar.

Edit the copy. Assuming you're authorized to do this (or can get away with it), editing the copy is often the most elegant solution.

Hyphenate manually. Look for loose or tight lines before a problem line, and either break a word or push a broken-word stub down to the next line. To hyphenate manually in QuarkXPress, use ⌘-hyphen. In PageMaker, use ⌘-Shift-hyphen.

Try a different font. Some typefaces take up more space than others—for instance, 9-point Adobe Caslon fits about 10 percent more characters on a line than 9-point Utopia.

Choose a smaller type size. There are limits, of course—few typefaces are legible below 9 or 10 points.

Make columns wider. Do this with caution—wide columns make it easy to get good spacing, but it's more difficult to read wide lines. Also, wide columns of small type tend to look gray and forbidding. For typical copy, Adobe Caslon at 9/11 sets nicely in 18- to 20-pica lines and is tolerable in 11- or 12-pica lines.

Don't justify. Use ragged type instead whenever you can. If you set type flush left/ragged right instead of justifying it, word- and letterspacing are not altered at all. If you find the raggedness at the right margin too wild, you can fiddle with hyphenation to try to shape it more gracefully.

Don't tamper too much. Resist changing spacing between characters in unjustified text, even if you want to eliminate or pad a short line. Adding spaces only disrupts the naturally even typographic color of flush-left/ragged-right type. In fact, it's likely to produce an ugly striped pattern of light and dark lines or create nasty optical blobs in which parts of letters collide.

2. Typewriter Habits

You'll impress clients and create a better-looking page if you make sure you follow typographical standards rather than word-processing ones. For the most part, this

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means using the correct special characters, but you should also avoid a few typewriting habits.

Mind your apostrophes and quotation marks. Type designers create apostrophes and quotation marks to match the design features of a typeface's other characters—the tail of the *y*, the stroke of the *r*, serifs. Using generic typewriter marks, or "straight quotes," instead of these complementary characters stamps work indelibly as amateurish.

Use curly quotes. If the curly quotes, also called smart quotes, function isn't already turned on in your page-layout software, you should turn it on (in many programs you can turn on smart quotes in Preferences; see your manual if you need instructions). With the smart-quotes option on, your software automatically produces typographic characters as you type double and single quote marks. PageMaker, QuarkXPress, and some other programs also include filters that convert the quotes automatically as you import text.

Double-check apostrophes. Even if you turn on smart quotes, you may still have problems with quotes. A program can insert an opening single quote when the correct character is a *leading apostrophe* (the first character in an abbreviation, such as *'tis*, or a truncated date, such as *'98*). Use the key combination Option-Shift-] to get the leading apostrophe character when you need it. (See figure 1 for an illustration of the difference between a leading apostrophe and an opening quotation mark.)

Use real feet and inch marks. Contrary to what you sometimes read, using typewriter marks for feet and inches is not typographically correct. The correct characters are in the Symbol font: for the foot mark, use the prime character (Option-4); for the inch mark, use the double-prime character (Option-comma).

Don't underline or use all caps. For emphasizing words in text or for indicating the title of a book or movie, use italics rather than underscoring. (In fact, it's best not to underline for any reason—the feature doesn't work correctly in scalable fonts.) For more-dramatic emphasis—for instance, in headings and subheadings—use bold type rather than all caps.

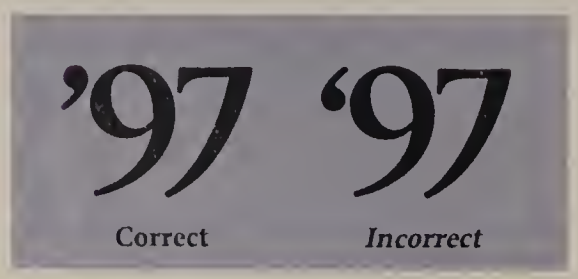


figure 1 · Don't get caught using the wrong character in truncated words and dates. Always use a leading apostrophe, not an opening quotation mark.

Use dashes, not hyphens. Use an em dash (Option-Shift-hyphen) instead of a hyphen to separate parts of a sentence. Also, when you want to use a symbol in place of the word *to* (such as in a range of time, 5 P.M.–6 P.M., or dates, 1963–1997), use an en dash (Option-hyphen), not a hyphen. But don't use a dash in phone numbers—that's the correct occasion for a hyphen.

Omit extra spaces. Don't put two spaces after a period, even though that's not how your high school typing teacher trained you. In typeset text, word spaces tend to be too large, not too small, and reading is slowed by large spaces between words. If you can't break the two-space habit, use your program's find-and-replace function to replace each double space with a single space before typesetting.

3. Uneven Leading

Use specific numeric values, not "auto" leading, to preserve line spacing when you insert a large character in a line of text. In fact, it's best to use specific leading values rather than autoleading in all your text.

4. Confusing Subheads

Leave more space before a subhead than after it. A subhead logically goes with the text that follows, not the text before.

5. Unreadable Display Font

Don't set a display font—a font that's designed and spaced for setting at large sizes—in body-text sizes, because it can make the type illegible. You can get away with using text fonts for headlines, though. You can usually identify display fonts as those that come in a limited range of styles or weights (and there may be no matching italic), such as Lithos and ITC Machine Bold.

6. Ligature Surprises

Don't let *ligatures* (two characters fused together, for example the *fi* character you get when you type Option-Shift-5) creep into words set in all caps. This sounds obvious, since ligatures are lowercase characters, but it happens when you use automatic ligature substitution in lines that are then printed in all caps (by using ⌘-K or ⌘-H on selected text or as part of a style, for example).

Don't use ligatures in headlines or other type set in large sizes either. You can't change the spacing within a ligature, yet headlines and large type need to be tracked to tighten spacing. Tracking text with ligatures will only make the ligatures stand out awkwardly. (See figure 2 for a sample blunder with ligatures.)

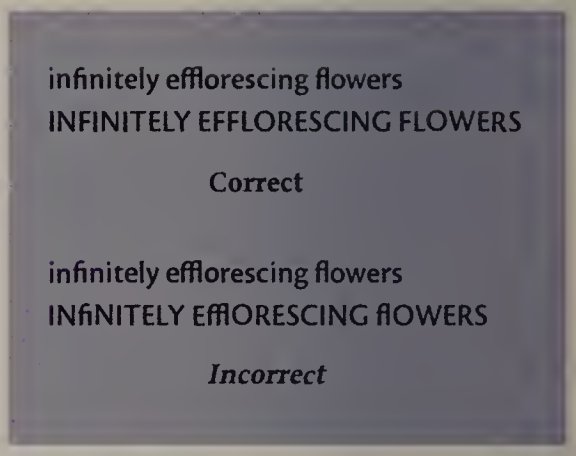


figure 2 · You'll get nothing but trouble if you include ligatures in strings of all-caps text. If you plan to make text all caps, leave ligatures out.

7. Lonely Drop Caps

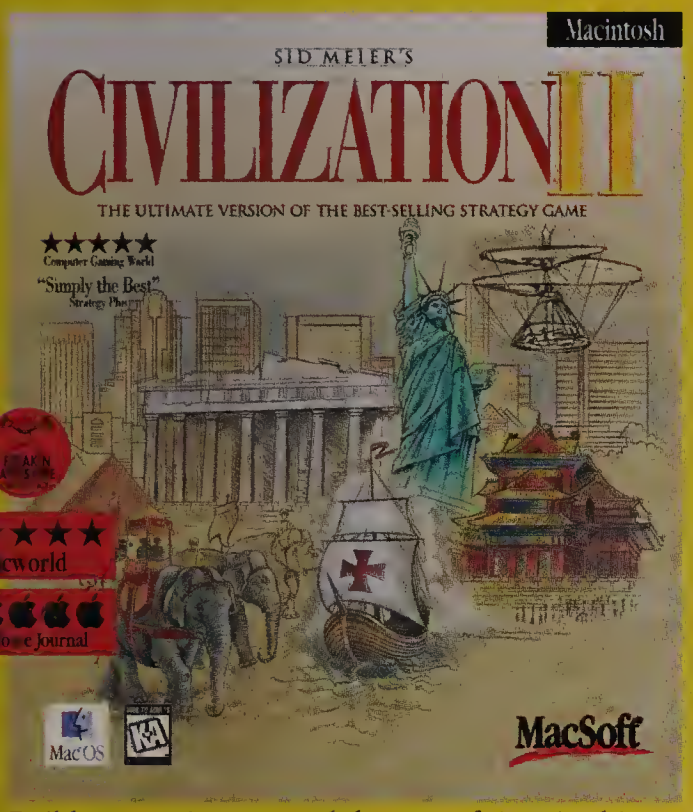
Although you see it sometimes in even the best publications, a drop cap sitting in a square hole with no visible relationship to the surrounding text is not only ugly but also distracting for readers (see figure 3). It's acceptable to pull the first line close to the cap, although this can look odd (it often helps to use bolder type or small caps for the first couple of words after the cap in this case). You can also fit the regular text around the cap, use an ornamental cap that fills the rectangular space, or use some other technique for drawing the eye to the start of text—a stickup cap, larger lead-in type, or a few words in bold.

8. Bad English

Even if the writer got it wrong in the copy, the person setting the type has long been responsible for correcting obvious spelling, grammar, and usage errors. Keep handy a basic guide to usage, such as *The Chicago Manual of Style; The Little, Brown Handbook;* or *The Associated Press Stylebook and Libel Manual.* Don't rely exclusively on a spell checker; be sure to proofread carefully to catch ambiguous words.

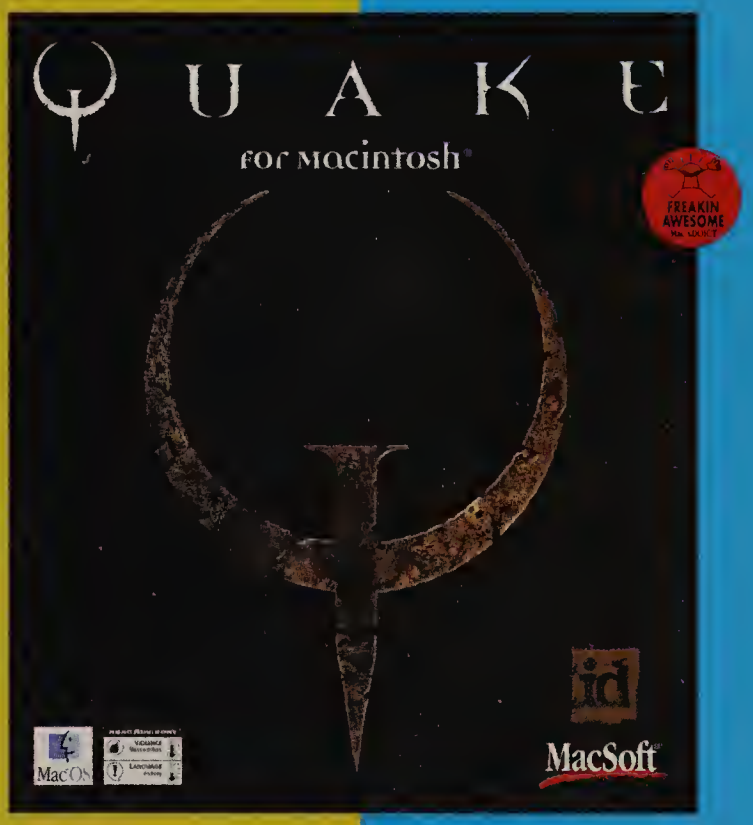
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LOOK ON HER, mark her well; be but about to say she is a goodly lady, and the justice of your hearts will thereto add, 'tis pity she's not honest–honorable. Praise her but for this her without-door form–which on my faith deserves high speech–and straight the shrug,the hum, or ha–these petty brands that calumny doth use . . .

Correct

ALONSO OF ARAGON was wont to say in commendation of age that age appears to be best in four things–old wood best to burn, old wine to drink, old friends to trust, and old authors to read, according to Francis Bacon in *Apothegms*, in which he also wrote that "Riches are a good handmaid, but the worst mistress."

Correct

Alonso of Aragon was wont to say in commendation of age that age appears to be best in four things–old wood best to burn, old wine to drink, old friends to trust, and

Incorrect

figure 3 · Nothing is sadder than a lonely-looking drop cap (bottom). Here are a couple of ways to integrate drop caps into text.

Use the right form of *its*. We all sometimes do it without thinking—add an apostrophe to the possessive form of *it*—yet this error stands out as a badge of ignorance. Be sure to take apostrophes out of the possessive *its* but not out of the contraction of *it is*.

Put commas and periods within quotes. Place commas and periods within closing quotes regardless of context. This practice strikes many people as illogical—in fact, it isn't followed in England—but in printed American English, it is correct.

Place all other marks of punctuation—question and exclamation marks, colons, and semicolons—outside unless they're actually part of the quoted material.

Don't hyphenate contractions. No sensible person would think of breaking such words as *isn't*, *haven't*, *couldn't*, and *didn't* before the *n*, but a computer sometimes does. The unalterable default hyphenation routines in QuarkXPress (although not in PageMaker and FrameMaker) break contractions, so we see this wretched error whenever QuarkXPress is used for setting text.

Unfortunately, repairing it is a bit tedious. Search for all occurrences of *n't*, and reunite any broken contractions by typing ⌘-hyphen (the optional-hyphen code) in front of the first letter of each word.

9. Crowded Caps

Use tracking to add space to strings of text you set in all caps to make them more legible and aesthetically pleasing. It's especially important to add space to all-caps sans serif typefaces, because letters tend to run together. Small caps also need extra letterspacing, for the same reason.

Style sheets make it easy to control the letterspacing of all-caps subheads: In PageMaker, include the Very Loose track in the style sheet; in QuarkXPress, assign a specific manual-tracking value. Alternatively, in either program, change the desired/optimum and maximum word-spacing values for the all-caps paragraphs to some high value—50 to 70 percent, for example.

10. Inconsistent Style

Handle each category (plain text, A head, B head, subhead, caption, pull quote, and so on) in the same way throughout an article or publication—the same typeface, size, style, and spacing, for example. The best way to accomplish this is by using style sheets and religiously applying a style to every paragraph. (If your software doesn't have character styles—PageMaker does not at this writing; QuarkXPress 4.0 will—you may need to make notes on how you set special kinds of text within paragraphs.)

Graphic designer Kathleen Tinkel writes about typography, design, and prepress. Her Print Clearly column appears monthly in MacWeek.

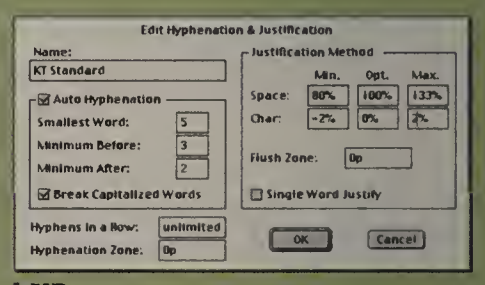
The Key to Better Spacing *software adjustments*

Rotten spacing can be improved, if not cured, by changing the default settings in your page-layout software. QuarkXPress' default settings tend to enlarge the spaces between words and tighten the spaces between letters. PageMaker encourages looser word- and letterspacing. For hyphenation, the default settings cause other problems. QuarkXPress offers good specific controls, but it is still likely to make hyphenation errors. PageMaker gives you less control over which words to hyphenate, and it sometimes fails to break capitalized words.

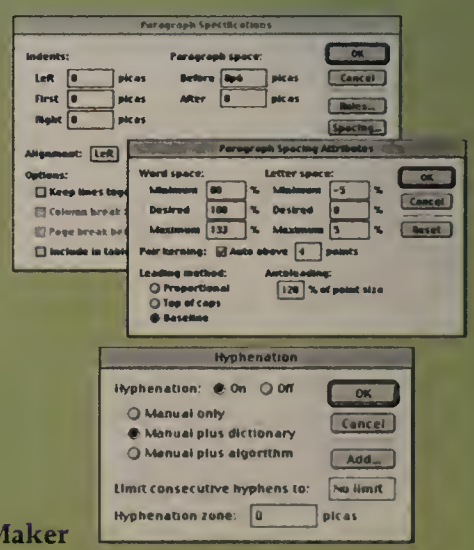
You'll get better results from both programs if you use the hyphenation and justification settings shown here. We set the hyphenation zone to 0 and didn't limit the number of consecutive hyphens, because you usually get better spacing if you give the software leeway to hyphenate liberally and then fix the text manually later. In QuarkXPress, we changed a couple of other settings to give the program more freedom to hyphenate: The smallest word that can be hyphenated has five characters, and the minimum number of letters before a hyphen is three.

This doesn't mean that you must necessarily accept all three-letter word stubs or tolerate long runs of hyphenated lines. But it's better to tolerate more than three consecutive hyphens than to allow bad spacing.

It's OK to leave only two characters at the end of a line in a pinch, but not when they're two narrow letters—the eye can fly right past such pairs as *il-* and *li-* at the end of a line, for example. Bringing only two characters down to the next line is less acceptable, but you can get away with it more easily if the letters are wide (*w*, *m*, and *o* are better than *i*, *l*, and *t*) or if they're followed immediately by large punctuation (a question mark, for example) or a closing parenthesis.



QuarkXPress



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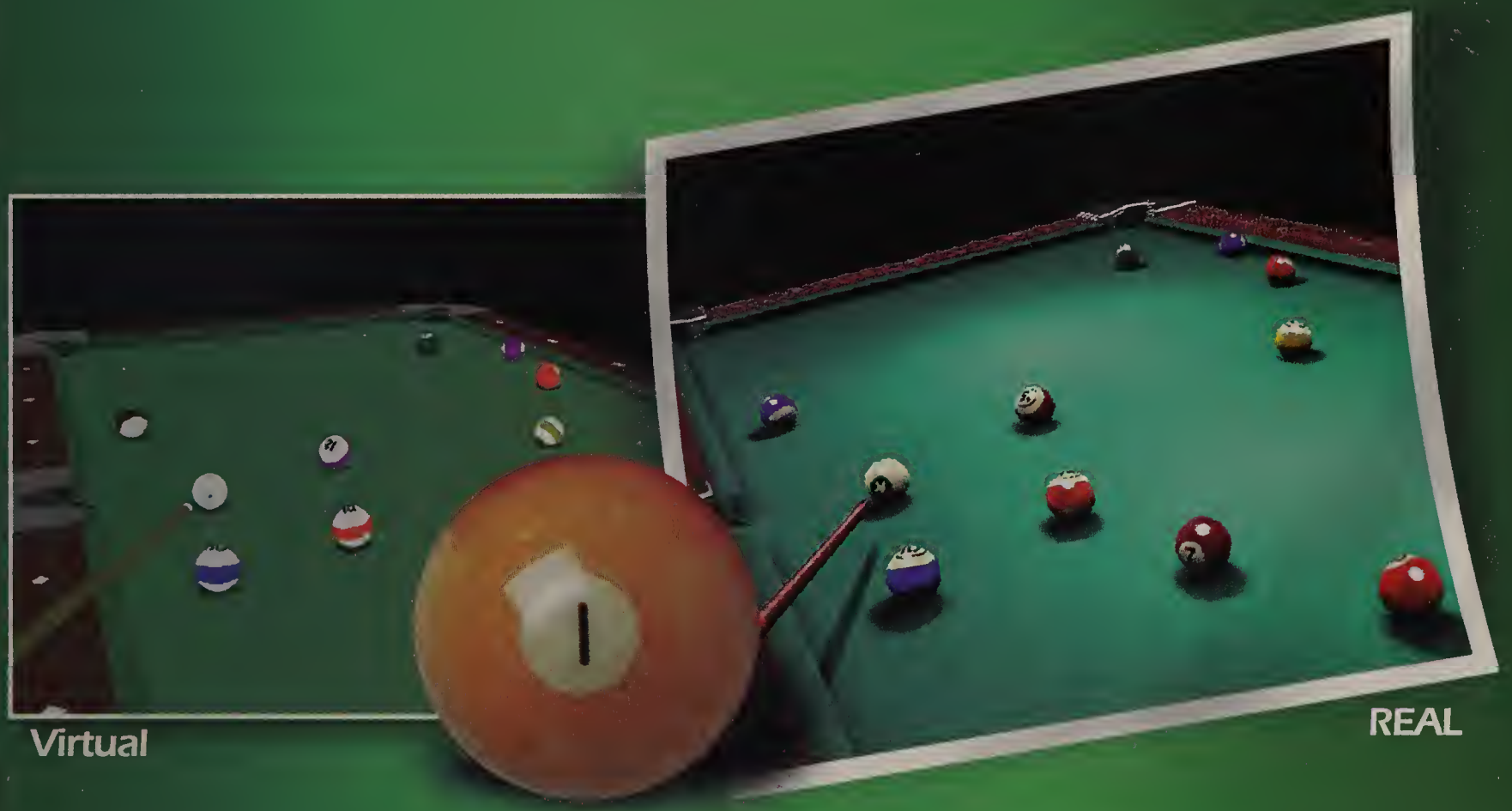


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Mixing Color and Gray Scale

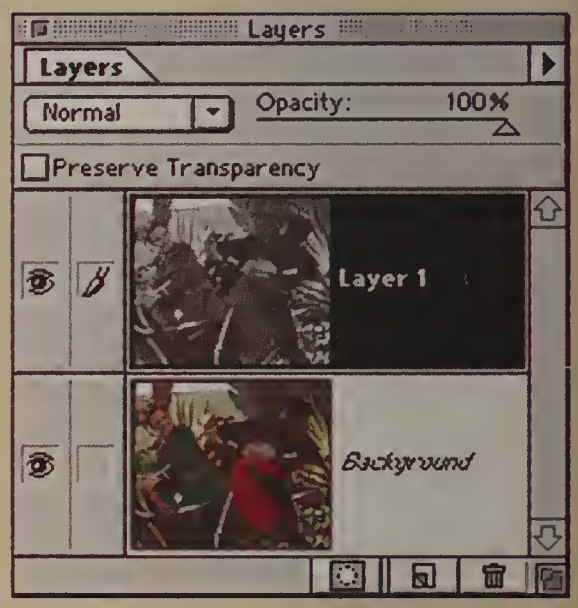
Paint visual impact into a gray-scale image by adding color

AS I BROWSE THE RACKS at my local card shop, there's one line of cards that always catches my eye. It features gray-scale images with a hint of color. Selectively adding color is a marvelous way to create a striking image, but it has other benefits too. Because the color immediately attracts the viewer's attention to certain areas of the picture, you have the opportunity to use images that are less than ideal. Let's say you're laying out a profile of your company's top manager, you have just one photo, and it has too much extraneous detail. By colorizing, say, just the face in the photo, you can force the distracting detail to recede into the background.

The approach we'll take to create a colorized gray-scale effect is simple. Using Adobe Photoshop, select an appropriate image,







1 Select an image that has both an area of interest in the foreground and some interesting details in the background.

There is little point in mixing color with gray scale in an image that has no detail in the background or whose background is already white (unless you want to simply dab color here and there in the image). Prepare the image by cropping it if needed and sharpening and color-correcting it as required. You'll achieve the best results if you begin with as perfect an image as possible.

2 Create a gray-scale duplicate of the image.

Create a copy of the prepared image (Image: Duplicate). Change the image to Lab Color mode (Image: Mode: Lab Color). In the Channels palette, click on the Lightness channel. Change it to Grayscale (Image: Mode: Grayscale), and click on OK when the dialog box asks to discard other channels. Even if the image looks a bit flat on your monitor, selecting the Lightness channel tends to create a better gray-scale image when printed. If the image is not going to be printed (say you plan to use it only on the Web), you can adjust the values in the image by using the Curves command (Image: Adjust: Curves) to darken the shadows and lighten the highlights a bit more.

3 Combine the color and gray-scale versions of the image in one document.

Drag the gray-scale image on top of the color original while pressing Shift-⌘. The ⌘ key gives you access to the Move tool, and the Shift key used in conjunction with the Move tool makes the gray-scale image snap onto the color image in perfect register, since the two images are the same size. In addition, using drag-and-drop saves RAM because Photoshop does not need to use the clipboard buffer for storage. You now have an image that contains two layers. You may discard the stand-alone gray-scale image.

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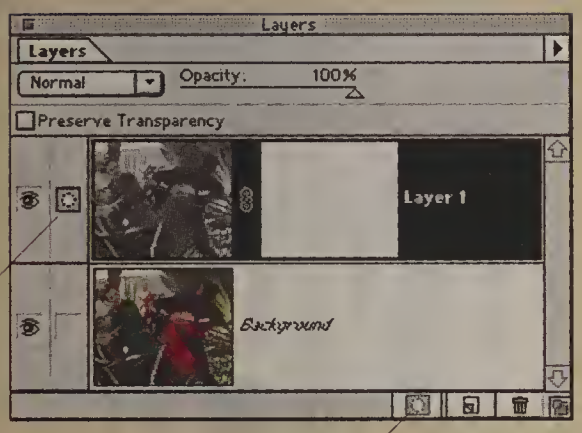
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prepare it, change a copy of it to gray scale, layer the image, and then create a layer mask in which you paint the areas that you want to remain in color. When you have finished the layer mask, you can soften the color or blur the background.

By using a layer mask, you gain a great deal of control over the final output. Your new image can display the original color along with the gray scale, or you can choose to pop the color to make it more intense or back off on the color to create a hand-tinted, pastel look. You can opt to let just a hint of color show through the gray-scale areas of the image, or you may decide to make a sepiatone from the gray-scale version and combine that with your color image. Softening the focus of the noncolor areas adds a depth-of-field blurring that further highlights the important parts of your final composition.

Although the basic example shown here contains just a Background and Layer 1, there is no reason to limit yourself to two layers (as you will see in step 6). If you want some of the color in the image to be strong and some to be more subtle, create one layer for the intense colors and another for the more muted colors. Create a layer mask for each intensity, and change each layer's opacity to produce the desired effect. There are many more possibilities for this technique that should be fun to discover on your own.

Sherry London is a graphic artist and a contributing editor for Computer Artist *magazine. She is the author of* Photoshop Textures Magic *(Hayden, 1997).*





4 Create a layer mask.

Change your foreground and background colors to the default (black and white, respectively) by clicking on the small black and white squares inside the colors area on the Toolbox. Create a new Layer mask by clicking on the layer-mask icon. Select the part of the image you want to colorize by painting. You don't actually touch the original image; Photoshop records all of your brush strokes on the layer mask. The original data remains available and uncorrupted.

5 Paint on the layer mask to reveal original color areas.

Select the paintbrush, and pick a brush from the Brushes palette (or create one that is the right size and softness for your image). With black as the foreground color, paint over the area you want to show in color. If you make a mistake, press X to paint with white and erase the area you did not mean to paint. Press X again to continue painting with black. (Black hides the image in the current layer; white allows it to be seen.)



6 Modify the look through opacity settings and blending modes.

You can leave the image as it is or control the way the color appears. While you have almost endless possibilities, let's look at several modifications you can make.

Double-click on the Background layer to change it to Layer 0. Doing so allows you to adjust the opacity. Set the opacity to about 80 percent so that the color in the image is a bit lighter. Create a new Background layer by pressing Option as you click on the new-layer icon (just to the left of the Trash Can) at the bottom of the Layers palette. Choose Background as the layer mode in the dialog box that appears. Duplicate Layer 1 by dragging it to the new-layer icon. Click on the image thumbnail in the Layers palette to make the image (rather than the mask) active. A paintbrush icon shows in column two. For the duplicate layer, click on the link icon (it looks like a bit of chain). This unlinks the layer and its layer mask; now apply a Gaussian Blur (Filter: Blur: Gaussian Blur) of about 10.0 (less if your image is small). Because of the layer mask, only the background of the image looks blurred. Drag the duplicate layer so that it's now beneath Layer 1 in the Layers palette, and change the opacity to about 85 percent. This lets some of the original color show through (or will in a moment). Make Layer 1 active, and change its opacity to 15 percent. Change the Blending mode to Multiply. By fiddling with the opacities of the two gray-scale layers, you can change the amount of color that shows through and the sharpness of the background image.

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By Jason Snell
jason@macuser.com

Walking the Browser Tightrope

You can't please everyone—but if you want a Web audience, you should at least try



CHOOSING WHAT'S HOT and what's not on the Web—whether it's an HTML tag, a plug-in, or even a Web browser—is a tough decision. It's one that Webmasters and Web authors working in the trenches have to make every day. If they make the wrong decision, they risk turning away half their audience.

The Web Before Gates

The day the first Netscape beta appeared, back in 1994, the Web game changed forever. Before Netscape, there were so few HTML tags and browsers that Web authors didn't have many choices to make—they just used the available tags. But Netscape rose to prominence by giving those chafing Web authors new tags that allowed them to create more-attractive pages. And since those pages looked so much better in Netscape than in Mosaic, most people started to use Netscape. An Internet upstart was born.

As Web authors started using more and more tags, pages designed for use in Netscape started to look worse and worse—or break altogether—in Mosaic, Lynx, and other browsers. Web designers had to start walking the tightrope they continue to walk today, trying to make their pages look as cool as possible in the latest browsers while still making them readable by the widest possible audience.

Then Bill Gates, who has more money than Oprah, decided to try to crush Netscape, forcing Web designers to choose between creating pages that will look good in Netscape Navigator and those that will shine in Microsoft Internet Explorer. Microsoft and Netscape keep trying to one-up each other by adding a snazzy new feature that also happens to be totally incompatible with the competition's similar snazzy new feature.

Refuse to Be a Victim

Although it takes some restraint and a lot of patience, you can create a page that looks pretty good in both Navigator and Internet Explorer—and you should. For the foreseeable future, people are going to come to your Web site with both browsers. That's important to keep in mind, because once you're lucky enough to find a Web audience, the last thing you want to do is turn away a big portion of it because it's not using your favorite browser.

If you hand-code a lot of your Web site by using a tool such as Bare Bones Software's BBEdit, being compatible means taking the extra time to check every page you create in both browsers. Preferably try out your pages with the last few versions of each browser.

If you use visual Web authoring software, such as Adobe PageMill or GoLive CyberStudio, you should be sure to check your documents with both browsers and complain to the tool's maker if it generates code that one or the other browser renders badly.

The Struggle to Fit In

Exciting new features of the Web will usually cause you the most trouble. For example, toying with Dynamic HTML, using a plug-in, running a Java applet, or embedding a JavaScript in a Web page are all acts that can lead to compatibility problems. With a plug-in, you can have compatibility problems no matter what browser your Web-site visitors use, since they may not have the plug-in installed, may be using a different version of the plug-in from the one you do, or may even be using a different plug-in that also handles the type of data you put on your page.

Simple elements, such as HTML tables, can also be interpreted in wildly different ways, even by different versions of the same browser. For example, I've discovered that a table that looks fine in Internet Explorer and past versions of Netscape Navigator doesn't look right in Netscape Communicator 4.0 (it has overlapping columns, which should be impossible for an HTML table).

If you think this sort of inconsistency makes it hard on Web authors and the developers of Web authoring tools, you're right. Not only must Web authors keep a catalog of HTML inconsistencies in order to avoid designing an Internet Explorer–only or Netscape-only page but they've also got to become experts at finding workarounds for mistakes that aren't their fault. Authoring tools such as NetObjects Fusion have had to have ridiculous workarounds, such as littering every page with dozens of invisible GIF images, in order to get pages to be truly WYSIWYG in most browsers.

Duty Bound

All of us have to be vigilant and make sure our little corner of the Web stays compatible with as many browsers as possible. But at the same time, Microsoft and Netscape need to step back from their feature war for a minute and focus on making their browsers compatible with one another in as many ways as possible. After all, even the coolest feature isn't much use if half the people on the Web can never see it.

Mr. Blackwell (www.mrblackwell.com) says Macworld *Senior Associate Editor Jason Snell looks best when viewed in Internet Explorer 4.0.*

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By Scott Bury
smartuser@macuser.com

Have Mac, Will Do Windows

Rather than part with your Mac, teach it to do Windows

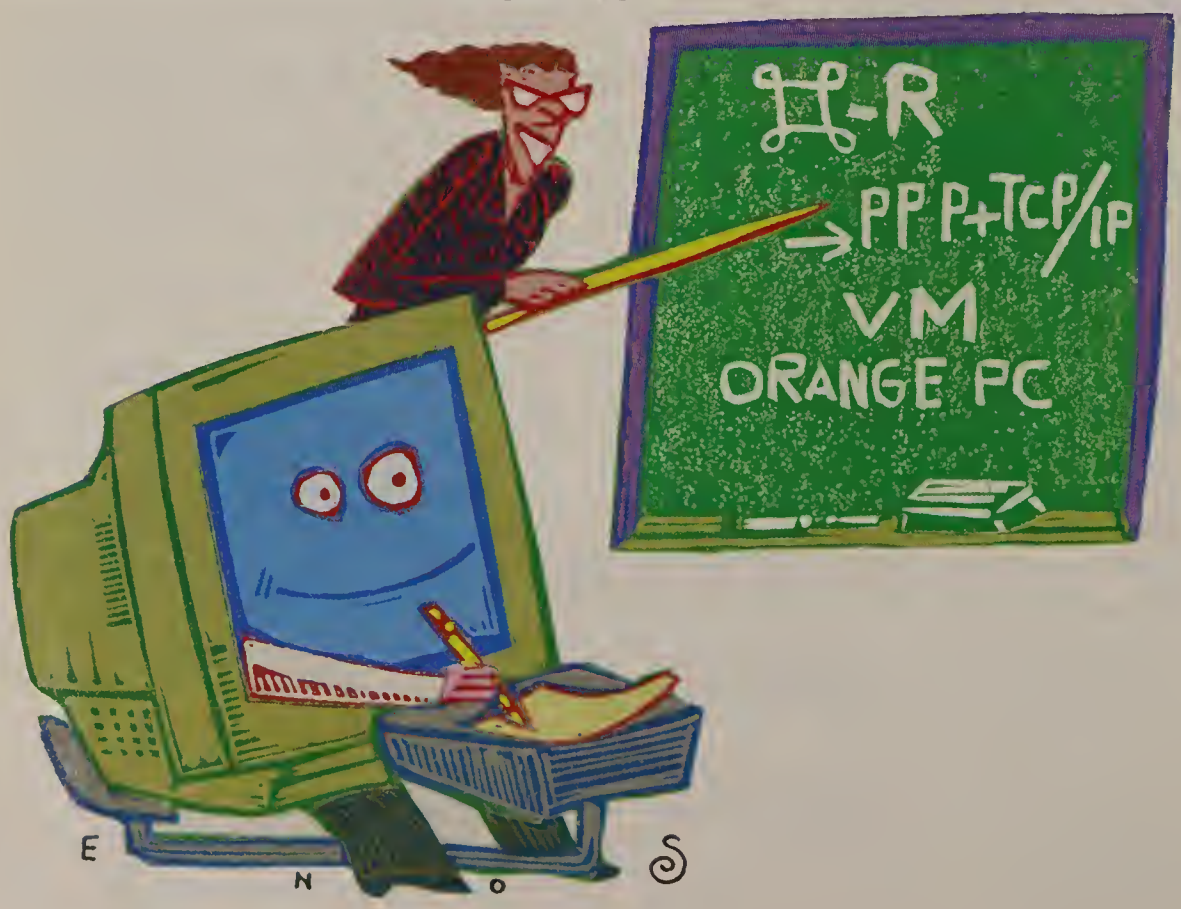


Illustration · Randall Enos

You don't have to give up your Mac, your investment in Mac software, or your Mac experience just because your boss or your most important clients insist that you accommodate their devotion to the Windows operating system. There are several ways to perform your duties in Windows without giving up your most productive tool. If you're lucky, all you'll have to do is use cross-platform applications or file-translation software. If you're not so lucky, you'll have to use Windows-only software, such as Microsoft Access or Computer Associates' ACCPAC. In that case, your best option is to emulate Windows on your Mac.

Since installing Windows on a Mac is not a matter to be treated lightly, let us help you decide whether it's best to use software or hardware to emulate Windows on your Mac. We also offer some tips on using Windows emulation (both hardware and software) that could save you a lot of hassle.

See Windows through Software

At about $200 or less, software emulation is the least-expensive way to go, but for some people it's not worth the savings. It can be irritatingly slow—there's a noticeable typing lag, and commands require at least a second to take effect. So we recommend it to those who only occasionally have to run a Windows application. It's not ideal for everyday use.

At press time, there were two programs to choose from: SoftWindows, from Insignia Solutions, and Virtual PC, from Connectix (go to the Macworld online site at www.macworld.com to see reviews of both these products in the *Macworld* and *MacUser* archives). Both programs recreate the Windows environment within your Macintosh. You can run any Windows software, as long as you have the RAM, a PowerPC-based Mac, and enough disk space.

SoftWindows

If software emulation seems like a good fit for you, go ahead—buy it, and install it. But before you go too far, here are a few tricks to help you avoid some problems we ran into with SoftWindows.

· **Optimize Your Hard Disk.** Do this before installing any software or hardware emulation product. They require a big chunk of space on your hard disk (at least 250MB).

· **Install the Software Correctly.** Don't try what we first did: We installed SoftWindows 3.1 and then upgraded it with the real Windows 95. While this can be done, it takes an awfully long time and the result is a very slow operating system—about one third as fast as what you get if you do it the right way. The right way to do it is to install SoftWindows 95 directly.

· **Give It Lots of Memory.** A good amount of RAM to dedicate to SoftWindows is 24MB. It's best to use real RAM, since SoftWindows doesn't work with RAM Doubler and sometimes won't even work with Apple's Virtual Memory.

· **Speed Up Launches.** Use SoftWindows' TurboStart option to reduce launch time. It saves your current settings when you quit so that the next launch takes less than a minute. To make

TurboStart work, select Shut Down from the Start button menu in Windows—don't select Quit from the File menu in the Mac environment.

· **Make More Room for Windows.** SoftWindows comes with Hard Disk Expander (see figure 1), software that makes it easy to increase the amount of hard-disk space you allocate to SoftWindows. To use it, you must quit SoftWindows and then double-click on Hard Disk Expander.

· **Thaw a Frozen Pointer.** If you can't move the Windows pointer with your mouse, then use the Mac's pointer to select the Setup menu and Emulate PC Mouse. Use ⌘-R for the right mouse button.

· **Avoid Floppy Jams.** Make sure you don't have a floppy disk in the drive when you launch SoftWindows, or you'll have to eject it with a paper clip. CDs don't seem to have the same problem.

· **Connect to the Internet the Easy Way.** If you want to use SoftWindows to connect to the Internet, keep in mind that peripheral devices, such as your modem, connect through the Mac OS. You can opt to set up the modem and Internet connection through the Windows control panel under the Settings menu. However, it's much easier to use the SoftWindows Setup menu to route your Windows browser and e-mail connection through the Mac's PPP and TCP/IP utilities. This method is slow, but it's seamless and reliable.

Virtual PC

Using Virtual PC is similar to using SoftWindows, but there are enough differences that we've included some tips to help you take advantage of this software specifically.

· **Run More Software.** Virtual PC doesn't seem to have the problem with Virtual Memory (VM) that SoftWindows does. That means you can use VM to increase your memory enough to run RAM-hungry Mac programs and RAM-hungry Windows programs at the same time. Be warned, however, that using VM may slow you down.

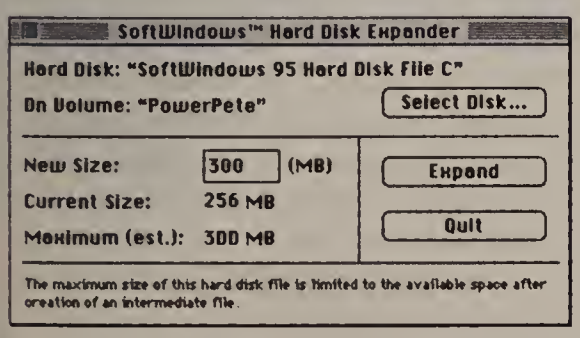


figure 1 • You're bound to need more disk space for Windows applications and files at some point. Of all the emulation software and hardware, SoftWindows gives you one of the easiest ways to allocate more space, using Hard Disk Expander.

· **Speed Up Windows.** Don't try to run two memory-hungry Windows programs at the same time through Virtual PC. Even if you have lots of real RAM, running them simultaneously is likely to make processing painfully slow.

· **Get Modem Help.** Unlike SoftWindows, Virtual PC controls your modem directly rather than filter commands through your Mac. This means you have to set up the modem through a Windows control panel. Unfortunately, you won't get much help from the manual. Rather than get frustrated trying to figure out Windows modem settings, call your Internet Service Provider's technical support for help.

Throw Hardware at It

Software emulation is functional but slow. If you need to work frequently in Windows, you're better off spending the extra money for a Windows-emulation card (which goes into an expansion slot in your Mac). At press time, there were three PCI expansion cards that put a Windows computer into your Macintosh: Apple's PC Compatibility Card ($1,049), Orange Micro's OrangePC Coprocessor (starting at around $700, depending on what's installed on the card), and Radius's Détente card (Radius has a range of cards that start at $700).

The main advantage to using hardware emulation is that it gives you a real PC. It's a lot faster, and you'll have fewer problems installing new applications and utilities.

The main disadvantage of the hardware approach is that you can buy a midlevel Pentium PC for about the price of some of the cards. It's up to you to decide whether the convenience of having two machines in one is important or if you'd rather make space for a second computer.

If you decide to install a PC-emulation card, these tips on using the cards could make your life easier.

· **Buy More Windows Real Estate.** Once you allocate hard-disk space to Windows, using the software that comes with the emulator cards, you are unable to increase that space. (Unlike SoftWindows, the cards don't come with Hard Disk Expander software.) Instead, you can create another file to serve as a D: drive or second hard disk.

· **Switch Quickly.** The handy keyboard shortcut for switching between Windows and Mac environments is ⌘-Return. You can use it if you have the Apple or Radius cards. However, with the Orange Micro card, you must launch the OrangePC application in the Mac environment and then use ⌘-D to get to Windows.

· **Find Missing Files.** It's easy to share files between the Mac OS and Windows, but it's possible that some files might seem to disappear. If you're not able to open a shared file from within an application, try dragging the file from Drive F: (the drive that receives shared files) to Drive D:. That may make it magically appear.

· **End a Freeze.** If you get stalled for more than a couple of minutes while you're shutting down Windows, you can hit ⌘-Return to get to the Mac environment and then choose Shut Down PC from the PC Setup control panel. It won't shut down Windows properly, but it may be your only option.

· **Identify Problem Programs.** If you're using the Apple card and have a Windows application that simply refuses to launch, it could be that the application won't work with this particular card. For instance, we couldn't get Microsoft Internet Explorer to work. If you have the same problem, check the application's manual to see if it requires 32-bit memory addressing. If so, the Apple card can't support it because the card has only a 16-bit bus. (Apple promises an upgrade soon.)

· **Speed Up Printing.** If you have the Orange Micro card, you can speed up printing: Use its LPT1 connector to connect directly to a printer, and select LPT1 from the Windows Printers folder.

A Tip about Tips

Our tips are mainly aimed at helping you use whichever emulation product you choose, but we hope they'll also help you decide what to buy. They may make it clearer what specific snags you'll run into when using either type of emulation product.

Scott Bury is a writer and editor based near Toronto, Canada, who finds it much easier to install Windows on a Mac than to hang wallpaper in his house.

Write to Quick Tips
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quicktips@macworld.com

SmartUser



By Bob LeVitus and Christopher Breen

Help Folder

Mac OS 8's new Contextual Menus and View Options, and your very own slide show

Those Cool Contextual Menus

Mac OS 8's Contextual Menus are by far its best new feature. But I want more. Is there a way to customize them? I'm not afraid of ResEdit if it's necessary.

Richard Gnossis, via the Internet

Bob: ResEdit won't be necessary, because there are already a bunch of cool Contextual Menu utilities available. For example, I'm using freeware called FinderPop, a slick Mac OS 8–only control panel by Turlough O'Connor that adds various submenus to the Finder's Contextual Menus. These include a Processes submenu; a Contents submenu (allowing you to see the contents of a folder you've selected in the Finder); and of course, the FinderPop submenu. FinderPop displays everything inside a special FinderPop Items folder—much like the Apple menu displays everything inside the Apple Menu Items folder—when you click on a volume (see figure 1).

Chris: Or try Mark Aiken's $15 shareware control panel PowerMenu. It costs more but does a whole lot more than FinderPop. And as an added bonus—pay attention here if you have an older Mac or haven't yet upgraded to Mac OS 8—PowerMenu brings all the fun of Contextual Menus to System 7 users.

Bob: And if you're as crazy about Contextual Menus as we are, you'll love the CM Central Web site (www.interdesign.ca/cmcentral/), the premier location for Mac OS 8 Contextual Menu plug-ins.

No Room for Views

I find it very frustrating that unlike System 7.5.x's, OS 8's View Options doesn't let you globally change your list options—show or hide Relative Date, Date Modified, Size, and Kind, for example. Do you know of any way to do this?

Jeffrey Campo, via the Internet

Chris: As much as I adore OS 8, I've got to say that Apple really dropped the ball on this one. Sure, it's lovely that you can adjust views for windows individually, but being able to do so globally is just as important—maybe more so.

Bob: Why Apple removed this feature, I'll never know. Unfortunately there's no easy way to set views globally—and no, using the old Views control panel from 7.5.x or 7.6.x won't work. But if any enterprising shareware author would like to come up with a solution, we'd love to see it.

I have a couple of AppleScript droplets I picked up off the Web that can help set views globally, but they're a little kludgy and both require Jon Pugh's collection of scripting additions, Jon's Commands (www.infoworkshop.com/~jonpugh). (For the uninitiated, a droplet is a special type of AppleSript application, or applet, that acts like a drop box onto which you can drag files to have some kind of operation performed on them.)

The first is John Blackburn's SetViewOptions, an AppleScript droplet that changes the view options for each folder contained within the folder you drag and drop onto the droplet. Changing view settings requires that you open the droplet in AppleScript's Script Editor and edit the droplet's script. Instructions for editing the script are included in the SetViewOptions documentation.

The second droplet is Garth Martin's OS 8 Views Setter v2.0. Unlike SetViewOptions, this droplet pops up a series of yes-or-no dialog boxes—"Use relative date?" for instance—to set views.

Problem is, both scripts are slow.

Chris: I've got to agree. Although the scripts work, they're hardly swift. While looking for an alternative, I took the macro route, via WestCode Software's OneClick. Lo and behold, I came up with something a little faster that can change the list view of many folders at one time—but the macro is still kludgy, in that it can't dig down through a parent folder and change all the folders within.

Using OneClick, I attached this script to a new button and placed it in my OneClick Finder palette:

```
On DragAndDrop
  Type Command "O"
  While (Window.Front <> "Desktop")
    SelectMenu "View", "as List"
    SelectMenu "View", "View Options..."
    SelectButton Check "Date Modified"
    SelectButton Check "Date Created"
    SelectButton Check "Size"
    SelectButton Check "Kind"
    SelectButton Uncheck "Label"
    SelectButton Uncheck "Comments"
    SelectButton Uncheck "Version"
    SelectButton "OK"
    CloseWindow
  End While
End DragAndDrop
```

Bob: Mighty impressive. What's it do?

Chris: When you drag and drop a folder or a group of folders onto the button, it first opens all of the folders. It then marches through each folder in succession and assigns List view to the contents; selects Date Modified, Date Created, Size, and Kind in the View Options dialog box; and closes each folder as it finishes.

To change View Options, open the script in the OneClick Editor and change the status of the Check and Uncheck commands—for example, to view Comments, change "Uncheck" to "Check" in the script outlined above.

Bob: Swift. But I still hope we see an easier shareware solution soon.

Slipping Slide Show

Do you know of any slide-show software that allows images to be shown at differing intervals? For example, the second picture would appear a minute after the first but maybe the third would pop up 30 seconds after the second.

Robert Reinhard, via the Internet

Chris: Of course, we know of such software. The only remaining question is: Are you willing to pay big bucks for it, or would you prefer to take the more complicated, penny-pinching route?

Illustration · Bob Staake

Reader Tip · *Refining America Online*

Pitching AOL's Pitches

The sales pitches that automatically appear when you log onto America Online can be annoying. Thankfully, AOL has now provided a way to turn them off. Here's how:

Type Keyword: Marketing Prefs, and double-click on Tell Us What Your Pop-up Preferences Are. In the bottom right corner, click on the box next to the item that mentions "special member benefit pop-up offers." Check the box stating, "I prefer not to receive special member pop-up offers from AOL." Other Marketing Prefs include Tell Us What Your Mailing Preferences Are—use this to request that AOL not provide your name to mass-mailing marketers—and Tell Us What Your AOL E-Mail Preferences Are, an option for requesting that AOL not provide your name to mass e-mail marketers.

Justin Leavens, via the Internet

Bob: Because I know Chris always goes the cheaper way, I guess it's up to me to supply the expensive answer. And that answer is powerful presentation and multimedia software.

If you already own a copy of Microsoft Office, you have one solution at your fingertips: PowerPoint. This presentation package does exactly what you want—allows you to set the amount of time each slide is displayed. Adobe's Persuasion—another presentation package—does this as well.

Although using PowerPoint or Persuasion is the easiest way to achieve your goal, you can instead opt for Apple's HyperCard or Allegiant Technologies' SuperCard. To make a slide show with either of these programs, just paste the pictures you want onto separate cards and write a small script for each card that tells it how long to wait before advancing to the next card.

Of course, there are also two really expensive solutions—Macromedia's Director and Quark's QuarkImmedia—but they each cost around $1,000. Obviously, using Director or QuarkImmedia to create a simple slide show is like buying a Ferrari to drive three blocks to the local Seven-Eleven—flashy, but hardly the best use of your hard-earned money.

Chris: An inexpensive shareware slide-show application would be a better choice, but unfortunately, I couldn't find one that satisfies your varying-time requirement.

Bob: Ah, but you're one of the Help Folder guys, so that didn't stop you!

Chris: You're darned tootin', it didn't! With the help of a macro utility—I used CE Software's QuicKeys for this one—I was able to create a variable-speed slide show in next to no time at all.

For my host applications, I chose Thorsten Lemke's amazing $35 GraphicConverter and Aaron Giles' equally stupendous postcardware, JPEGView. Although it's hardly the main purpose of these utilities, they both sport slide-show components that allow you to advance slides by clicking the mouse button or pressing the Return key. Here's the procedure for creating the macro:

Gather together the pictures you want to display in your slide show—putting them in a single folder is the easiest way to go about it. Then locate the slide-show options for each program. In GraphicConverter, you'll find them by selecting Slide Show from the File menu, clicking on the Options button, and then selecting the Time tab. In JPEGView, select Slide Show Options from the File menu.

For QuicKeys to do its job properly, you must turn off any automatic slide-advance functions in these Options dialog boxes. In GraphicConverter, you click on the "After mouse click" button in the Time dialog box, and in JPEGView, you select "User-controlled" from the left-hand pull-down menu.

Now the easy part: Select Record Sequence from the QuicKeys menu, fire up the slide show, and press Return to advance through all your slides. Once you've reached the end, you'll need to exit the slide show. To do so in JPEGView, type ⌘-period and then ⌘-W. To quit GraphicConverter's slide show, simply type ⌘-period. Finally, select Stop Recording from the QuicKeys menu.

All that's left for you to do now is name the QuicKey, assign a keyboard shortcut to it, delete all those Wait commands inserted by QuicKeys, and insert a User/Timed Pause between all the slides. The User/Timed Pause shortcut is where you specify how long each slide will be displayed on your screen.

When you want to run that slide show in the future, just tell the applications which slides to show, start the slide show, and fire up your QuicKey. Voilà! Timed slide show on the cheap!

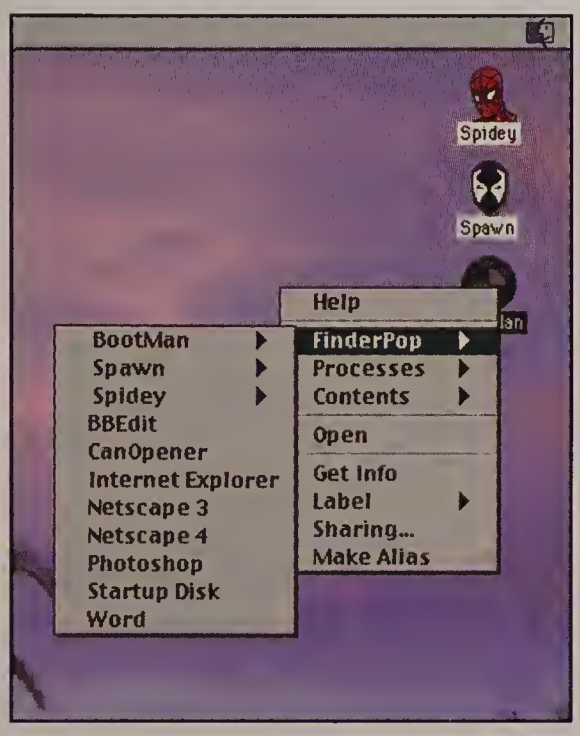


figure 1 • FinderPop freeware beefs up your Contextual Menus in three ways.

Reader Tip · *System Software*

Get Your Files in Order

If you have an extended keyboard, there's a way to place a file or folder at the end of a list that's organized by name—without visibly changing the filename.

Highlight the file or folder name in the Finder, and press the left-arrow key to move the cursor to the beginning of the filename. Then press the Forward Delete key (under the Help key). You won't observe any change in the name, but when you click outside the name field, that file or folder will drop to the bottom of the list.

Paul Zugnoni, via AOL

Bob: With this column, our work is done here.

Chris: And as sorry as we are to go, we'd like to take this opportunity to thank our ever faithful Help Folder readers.

Bob: So, as Chris makes the appropriate sound effects in the background . . .

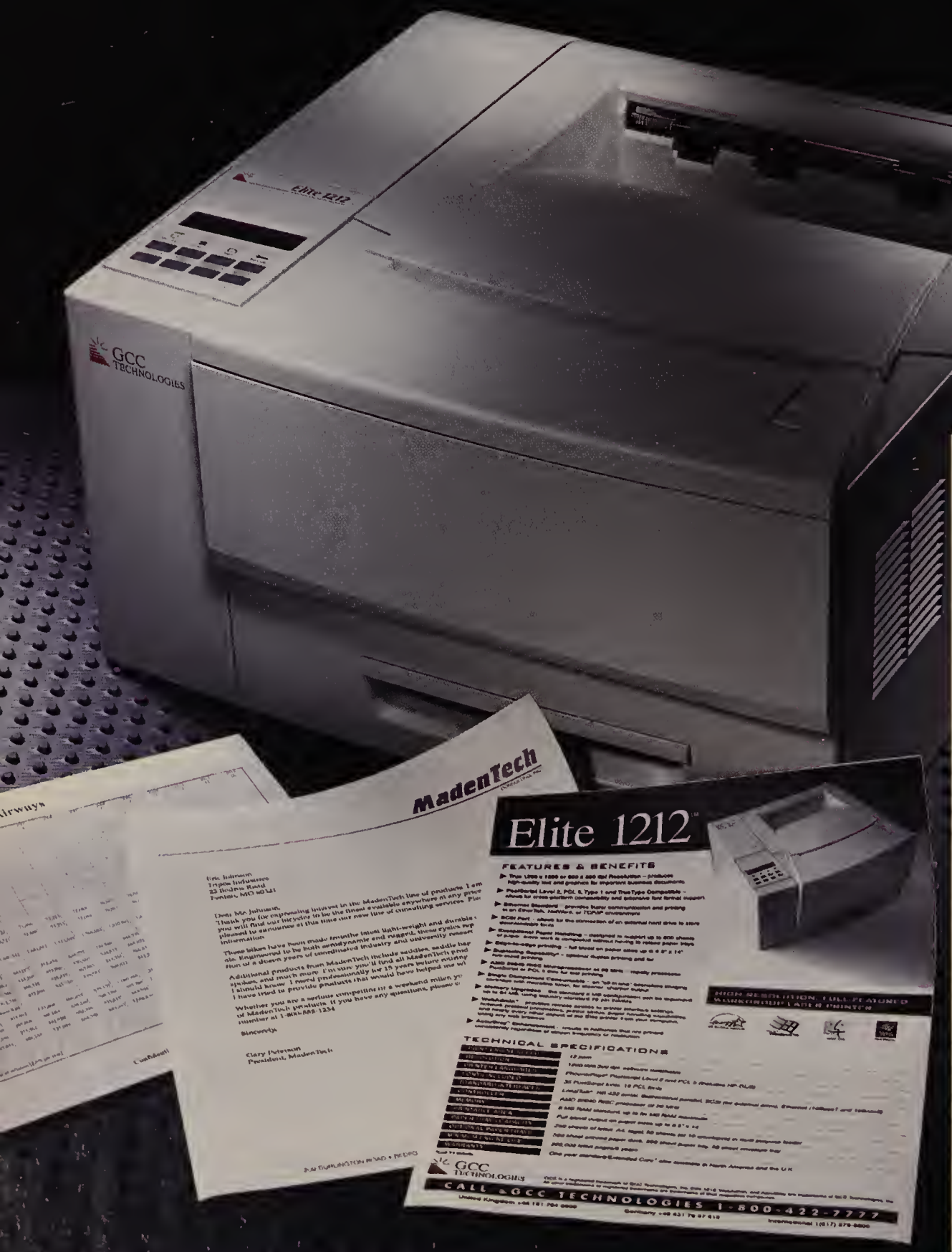
Chris: . . . clip, clop, clip, clop . . .

Bob: . . . we will ride slowly off into the sunset.

Bob & Chris in unison: Thanks! Good night! You've been a beautiful audience!

Bob LeVitus is the author of Mac OS 8 for Dummies *and is the Mac columnist for the* Houston Chronicle. *Christopher Breen recently coauthored* The Macintosh Bible Guide to Games, *published by Peachpit Press.*

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The Forbidden Mac

Software Mom may disapprove of

By Christopher Breen

maxuser@macuser.com



Illustration · David Ricceri

My parents believed that children who stepped outdoors barefoot between the months of October and May would contract pneumonia. They were likewise convinced that if my impressionable young mind were exposed to the wicked antics of the Three Stooges for even a single afternoon, I'd spend the better part of my adult years hewing rocks in the State Pen. Hence my impatience to grow up, leave home, expand my horizons—in other words, try everything my parents would heartily condemn.

I'm all grown up now, but my rebellious streak still survives. And thanks to modern computing, I can feed the rebel in me and dabble in The Forbidden without ever leaving the safe confines of home. Feel the need to be naughty? Join my stroll through the mildly mean streets of Macintosh software.

Sex

Seeking the taboos of my childhood rather than those of my adulthood, I skipped the adult-entertainment products advertised in the back of some computer magazines. Instead, I began my journey down the prohibited path with Cambrix Publishing's comparatively chaste **Swimwear Illustrated** (♦♦½, $23.98 list).

The cover dared me to "get interactive with supermodels," so imagine my heartbreak in discovering that the interactivity was limited to the lame exercise of watching one model's face morph into another.

The rest of the CD-ROM is devoted to pictures of young women thrusting out one hip or the other while dressed in skimpy swimwear. If this is your idea of hot stuff, you may find the annual *Sports Illustrated* swimsuit edition or a subscription to *Swimwear Illustrated* magazine a better investment.

Drugs

Considering the drug education I received at school and home, I expected simplistic "Just Say No" platitudes from Electronic Vision's **Uppers, Downers, All Arounders** (♦♦♦½, $170 list). But my fears were groundless. This comprehensive CD-ROM addresses substance abuse in an even-handed and informative manner.

It's a text-intensive disc, though, and hardly a multimedia marvel; narration or pictures only occasionally accompany the hyperlinked text. The CD-ROM's real strength lies in its wealth of information—much of it taken from research conducted by San Francisco's highly praised Haight-Ashbury Free Clinic.

Uppers, Downers, All Arounders is too expensive and detailed for home use, but every school and community organization wanting to educate people about abusable substances should have a copy.

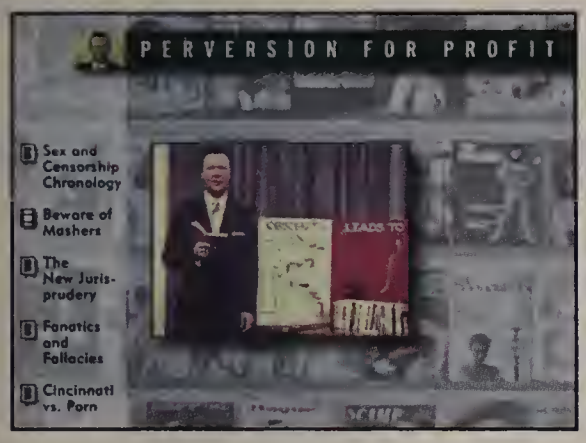
Lies

Married during the early years of the Eisenhower administration, my parents were surely influenced by the mores of the day. To understand my elders' odd admonitions, I felt compelled to dig through the remains of that period of American history, via Voyager's ten-volume series, **Our Secret Century** (♦♦♦♦, $29.95 list each two-volume set).

Five boxed sets contain more than 100 short "educational" films produced in the U.S. during the 1950s and early 1960s. Each set has 6 to 15 films that focus on a

The Forbidden City
"Eenie, meenie, chile beenie, the spirits are about to speak . . . ." Check out the esoteric arts online at www.interart.net/forbidden/default.html

The Forbidden Directory



particular topic—personal hygiene, sex education, or juvenile delinquency, for example. Each film is accompanied by discussions accessed through nicely annotated pop-up notes.

Post–baby boomers will find the films' outdated messages quaint and comic, whereas those who lived through the times may be shocked anyone took such lockstep propaganda seriously. Young or old, everyone will gain insight into the bland, homogeneous culture foisted on post–World War II America.

Feelings

Emotional self-examination was hardly encouraged around my childhood home, so my sensitive, adult self decided to gauge how I fared against the norm with Virtual Knowledge's **Emotional IQ Test** (●●●, $24.95 estimated street).

Your ability to identify and understand emotions is tested via multiple-choice questions; for example, you're asked to look at an image of someone's face and state which emotions it conveys.

Although I was judged to be highly empathetic and perceptive, the obvious nature of the questions made me wonder what sort of insensitive louse would fail to score well. Also, I had to wonder who would bother to use the software more than once. If you score badly, do you want to hear once more that you're an imperceptive jerk? Although I don't buy the "science" behind it, the Emotional IQ Test is inexpensive enough for entertainment.

Pulp Fiction

Deprived of the Three Stooges, I took youthful refuge in the pulpy pages of 15¢ comic books. But as I outgrew the Justice League of America and developed a taste for *National Lampoon*, my misguided mother threw away my entire comic-book collection. I paid homage to these days of my misunderstood youth via Voyager's **Comic Book Confidential** ▶ (●●●●, $39.95 list).

The CD-ROM's centerpiece is Ron Mann's QuickTime-formatted documentary film *Comic Book Confidential*, which traces the development of comic books and their writers from the mid-1930s through modern times. The film, although chronologically presented, isn't a strict history; Mann uses interviews with such key artists as Will Eisner and R. Crumb to flesh out the story.

The disc also has artist biographies and work samples, but hard-core fans may be disappointed by the absence of some favorite artists, such as Matt Groening.

Comic Book Confidential is not for everyone—particularly children and folks offended by adult themes. But being neither child nor squeamish adult, I thoroughly enjoyed it.

The Black Arts

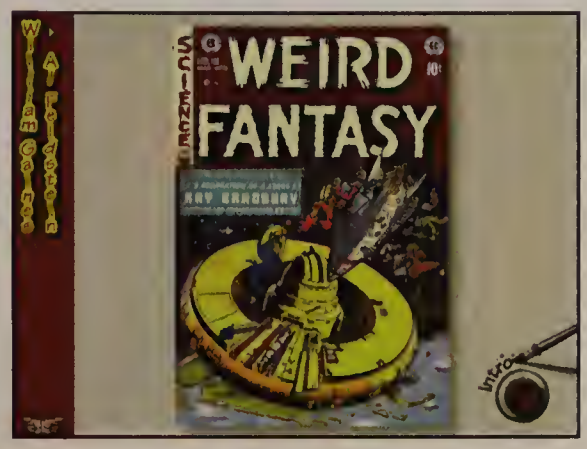
My folks would have frowned on me jeopardizing my immortal soul by dabbling in the psychic realm. And therein lay my inspiration to try out Multicom's **Mystic Discovery Suite** (●●●, $39.95 estimated street), a collection of three CD-ROMs.

The Astrology Source CD-ROM created astrological charts based on the date, time, and place of my birth. Its results were in typical horoscope-speak ("As an ambitious Capricorn you exhibit little emotion, but deep down bear a heart of gold"), but at least the reading was consistent. The Cyber Tarot and Palmistry CD-ROMs, however, had a few consistency problems; I mean, how could I be both disorderly *and* overly tidy?

Mom and Dad are unlikely to lose me to the Covenant of Transcendental Meditators, but the Mystic Discovery Suite's clean interfaces and copious multimedia elements kept me nicely entertained.

The Seventh Circle

Until this point, I had only flirted with the forbidden. It was now time for a wrenching and chilling foray into the dark territory most feared by Macintosh users: Windows 95, as represented by Virtual Training Company's **Windows 95 Training CD** (●●½, $49.95 estimated street).



This hybrid CD-ROM provides a QuickTime introduction to Microsoft's omnipresent operating system. Users of Insignia's SoftPC and Connectix's Virtual PC can pause the CD-ROM's lessons to experiment with Windows 95. The disc gives a decent overview of Win 95's main features, but you'll get less-expensive, more–in-depth help from any of the Windows 95 books.

Out of the Dark

Despite persistent parental warnings to the contrary, my soul remains largely unscathed after my wicked wanderings. I've survived comic books, bathing beauties, propaganda, and even the dreaded Windows 95. Could it be that Mom and Dad were wrong about everything? Only one way to find out: My shoes are off, and despite threat of barefoot-induced pneumonia, I'm going outside for a walk on the wild side.

Macworld Contributing Editor Christopher Breen isn't really wicked, he just writes that way.

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Andy Ihnatko



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andyi@macuser.com

Transitions

Apple's moving on, and so are we

Today, we shall reflect on Change and, perhaps more importantly, on the subject of Transition.

Change, after all, is a lot like History, or Art: You really can't observe it while you're inside it. Only 80 years later do we fully appreciate World War I as senseless prologue. *Soiled Underpants in Jello* might be the buzz of the art world today, but it won't really be Art until a hundred years from now when it's agreed that it's still worth cluttering up the Museum of Modern Art with.

Until the passage of time helps us separate the significant bits from the rest, we're stuck here balanced on these razor-thin moments of Transition that separate the past from the future.

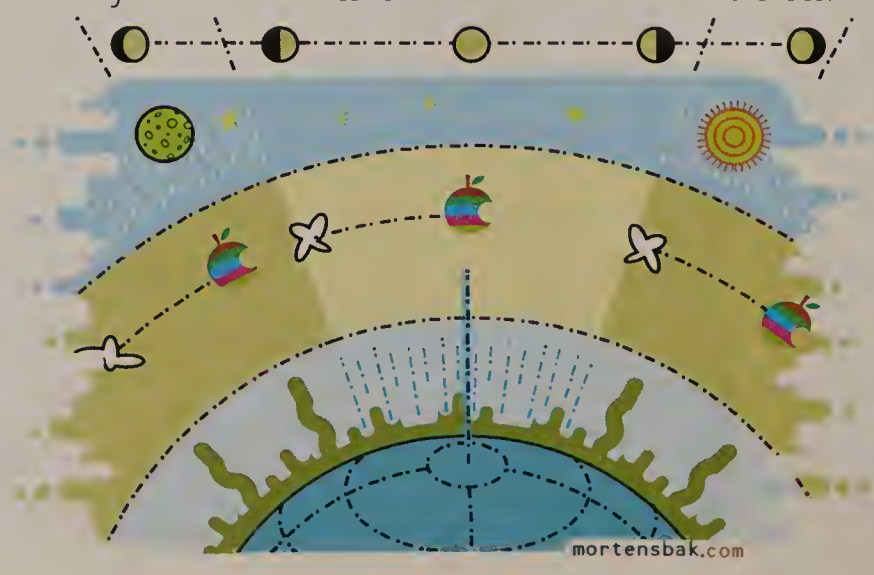
Apple, at this moment, is up to its neck in transition. Let's count them all up. It's transitioning from an old, and in some ways antiquated, OS to Rhapsody. It's transitioning from a goal of a more open Mac OS, with cloning and support for CHRP, to a more closed system. It's transitioning from a strategy that markets the Mac as a have-all, do-all, be-all machine to one that bills it as The Critical Tool for education and creativity.

Apple is also transitioning back to "1984"-style commercials and ads. Well, this I enjoy. Like many of you, I tuned in to watch *Toy Story* there on ABC just to see the megahyped new Apple commercial. After the vaguely confusing series of personalities and quotes faded to the Apple logo, I turned to my friends there in the living room. "So you see," I explained, "we Mac users, we're really a *hell* of a lot like Gandhi." They seemed to see the logic in this—it helped that I was making salt at the time—so score one for Chiat/Day.

Most interestingly, Apple is transitioning back to good–old-fashioned cage-match–style Godzilla Management. Steve Jobs as Godzilla, Larry Ellison as Gamera. No, no, I don't mean that the way it sounds. I mean that they're both big, towering, unmistakable individuals, and when they arrive, they bring excitement with them.

Amelio and his predecessors were more like the Horror of Party Beach and the rest of those rubber monsters wandering through the movies on *Mystery Science Theater 3000*. They don't really think to *do* anything until the hunky lead and the young tomato of a girl reporter drop an A-bomb on them at the end. But Godzilla! Sure, you might not agree with his policies, but you can't say he doesn't keep himself busy!

But it's too easy to let ourselves wallow in this sort of thinking. Rhapsody, from all available evidence, is going to kick major butt, possibly leapfrogging any competition out there. Irrelevant. Rhapsody, it appears, will first be positioned as a server solution, not as a severe Pantsing to anyone running another operating system. Irrelevant. Clone licensees are no longer here to fill the role of the quick and agile organizations getting the hottest technology to the marketplace with Indy-car swiftness and agility. Will Apple still be able to claim that the fastest PCs on the planet run the Mac OS? Irrelevant. Apple is producing some of the best price/performance machines on the market. It's finding a place for Newton Technology again. Network Computers, though as-yet unproven, can be marketed by the technology's most powerful cheerleader, and they can be marketed under an Apple logo. Steve Jobs has switched from his Pixar wire-rims to contact lenses.



All irrelevant.

This is mere transition. It's time for us to stop worrying; to stop fetishistically charting Apple's progress as a series of changes and turmoils, of Events that may or may not affect stock performance.

We should return to that time when we didn't give a damn. To 1984, when the Mac was an unproven and unpopular machine with too little memory, no software, and one floppy drive for everything. To 1984, when on top of everything else, it was way too expensive. To 1984, when all we felt needed be said was "I use a Macintosh because it's the best there is at what I do." If I have to leave you with one thought, that's it.

Fade to Black

Which sort of brings us to the last bit of Transition: namely, of course, the transition of *MacUser* and *Macworld* into a new, unified magazine built from selected elements of both mags. Sadly, this is the last time I'll have the opportunity to address *MacUser*'s readership en masse. I hope you understand how sincerely grateful I am that you've all been kind enough to give me your attention on a monthly basis for the past eight years. I am gratified that y'all had as much fun as I did. Special thanks to all of you who took the time to write; every letter and e-mail was appreciated. And to that guy who told me two years ago that his sweetie enjoys my writings so much that he reads them to her every month as foreplay, your message is still pinned to my wall and if there's anything I can do to ease this moment of Transition for you and Angie, my address remains andyi@world.std.com.

As the wise man said late at night a few years ago, I hope we all meet again some day, even though I'll be someplace else when we do.

Macworld

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9	ATI Technologies	256	—
139	Bottom Line Distribution	37	800-990-5688
140,141	Club Mac	96	800-CLUBMAC
152,153	Computer Discount Warehouse	2	800-509-4239
18,19	Connectix	192	—
15	Denaba Software	57	800-733-6322
16	Diehl Graphsoft	46	410-290-5114
151	Digital Graphix	36	800-680-9062
45	Epson America	—	800-BUYEPSON
66,67	Epson America	—	800-BUYEPSON
97	Extensis	13	800-796-9798
85	Farallon Computing	—	510-814-5000
91	Fujitsu Computer Products of America	202	800-626-4686
55	Hitatchi NSA	74	800-441-4832
53	Infowave	32	800-663-6222
7	IXMICRO	53	888-467-8282
154,155	J & R Computerworld	282	800-221-8180
BC	Kensington Microware Ltd.	12	800-535-4242
5	Kingston Technology Corporation	201	800-435-0677
142	L. A. Trade	—	800-433-3726
IFC,1	La Cie	52	800-999-1332
47	Mac Academy	106	800-527-1914
156	Mac Connection	145	800-800-3333
146,147	Mac Mall	131	800-222-2808
61	Mac Soft	28	800-229-2714
63	Mac Soft	23	800-229-2714
65	Mac Soft	29	800-229-2714
92	Mac Soft	40	800-229-2714
116	Mac Soft	39	800-229-2714
119	Mac Soft	30	800-229-2714
121	Mac Soft	25	800-229-2714
148,149	Mac Warehouse	150	800-434-3035
51	Maxell Corporation of America	120	—
150	MegaHaus	229	800-786-1184
34,35	MetaCreations	5	800-846-0111
59	Microtek Labs, Inc.	—	800-654-4160
IBC	Multi-Ad Services	187	800-447-1950
29	NEC Technologies	019	800-NEC-INFO
8	Orange Micro	33	714-779-2772
86	Panasonic Communications Co.	60	—
158	Pro Direct	135	800-524-9952
10,11	Ricoh	4	—
36,37	Sony	—	888-552-7669
57	Symantec-Visual Page	151	—
113	Tektronix	—	800-835-6100
159	The LLB Co.	—	800-848-8967
143-145	The Mac Zone	71	800-436-0606
76,77	Umax Computer	100	888-625-UMAX
20,21	ViewSonic	59	800-888-8583
6	VST Tecnologies	73	508-263-9700

Macworld Product Index

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1a. For which of the following Mac-related products do you specify, recommend, approve, purchase or influence the purchase?

1b. Which of the following do you plan to purchase in the next 12 months? (Check all that apply.)

	Purchase Involvement		Plan to Buy
Desktops/PowerBooks	◯	1	◯
Monitors	◯	2	◯
Printers	◯	3	◯
Storage Devices	◯	4	◯
Networking/Data Communications	◯	5	◯
Internet/Intranet products/services	◯	6	◯
Software: business/productivity	◯	7	◯
graphics/design	◯	8	◯
interactive publishing/ multimedia	◯	9	◯
entertainment	◯	10	◯
education	◯	11	◯
other software	◯	12	◯
Any other products	◯	13	◯

2. Are you employed, and involved in purchase decisions for 5 or more Macs? ◯ Yes (1) ◯ No (2)

3. What's Your Opinion?
What are your main frustrations in making Mac-related purchase decisions?

◯ 1. Lack of expertise in assessing products
◯ 2. Difficulty in installing or using products
◯ 3. Too many choices
◯ 4. Not enough choices
◯ 5. Unclear needs
◯ 6. Concern that cheaper, better products are about to come out
◯ 7. Other (please specify) _____

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952 Printers
953 Scanner & Digital Cameras
954 Online/Internet
955 Storage Devices
956 Monitors & Graphics Boards
957 Utilities
958 Clip Art & Fonts
959 Memory
960 Draw/Paint/DTP Software
961 Image-Editing Software
962 Other Graphics Software

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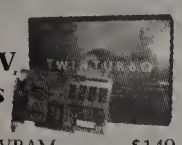
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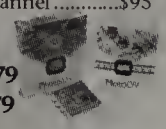
*Component System $3795

IX Micro Display/TV PCI Cards

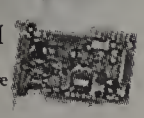


IX Micro 2MB VRAM $149
IX Micro 4MB VRAM $219
IX Micro 8MB VRAM $499
Turbo TV 125-Channel $95

Radius
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18GB RAID 1659

$279



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512k L2 Cache DIMM.....$99
TW 1MB L2 Cache DIMM.....$169
1MB VRAM DIMM $31

DIMMs 168-Pin 3.3 volt
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64MB 168-Pin DIMM 60ns $209
512k L2 Cache DIMM.....$79

SIMMs 72-Pin
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32MB SIMM 60ns $95
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1mb PCI Vram DIMM $27.95
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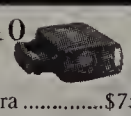
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GV Teleport 56k X2/FLEX ..$157.94
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PB 1400 8-Bit Video Out $159.95
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Acceleration!

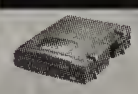
200Mhz/604e Processor Card XLR8 $248



Processor Upgrade card fits into 75/76/85/9500s

TechWorks Power3D $222
XLR8 MACh Speed 200Mhz.....$309
XLR8 MACh Speed 225Mhz.....$374
XLR8 MACh Speed 233Mhz.....$428
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PowerForce G3 275/275/1mb..$2549
MaxPowr 225Mhz 604e $779
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Magic Jaz Drive External $349
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Apple

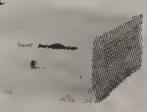
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- *24x Speed CD-ROM*
- *4GB 5400RPM HD*
- *IMS 128 8MB VRAM*
- *Processor Upgradable*
- *1-Year Warranty*

PowerMac 7300 604e/180Mhz $1859

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- *12x Speed CD-ROM*
- *2GB 5400RPM HD*
- *2MB VRAM*
- *Processor Upgradable*
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PowerMac 7300/200Mhz 1959

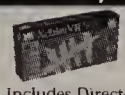
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- *604e PowerPC 300Mhz!*
- *32MB RAM, 1MB Cache*
- *24x Speed CD-ROM*
- *4GB 5400RPM HD*
- *2MB VRAM*
- *Processor Upgradable*
- *1-Year Warranty*

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Targa 2000 PCI $3299
LC/PDS 2MB VRAM 630/LCIII ..$239
MacPicasso 2MB VRAM NUBUS$289

Favorite Software

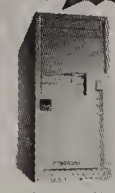
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UMAX Computer Corporation SuperMac S900L 604e/250Mhz

$3339



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- *8x Speed CD-ROM*
- *2GB 7200 RPM HD*
- *IMS 128 8MB, Zip*
- *Processor Upgradable*
- *1-Year Warranty*

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C500LT/240 24/2GB/CD $1379
C600L/200 16/2.1GB/CD $1269
C600L/240 24/2.1GB/CD $1469
C600X/240 32/3GB/12xCD..$1779
C600X/280 32/4GB/12xCD..$2177

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Apple Stylewriter 6500 $489



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Apple Stylewriter 4500.....$343
HP 5M 600x600 12ppm Laser $1599
Epson Stylus Color 600 .....$295
Epson Stylus Color 800 .....$397
Epson Stylus Photo 6-Color.....$489
Epson Stylus 3000 11"x17" $1769

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Epson Expression 636 Upgrade..$719
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Microtek Scanmaker III $1429
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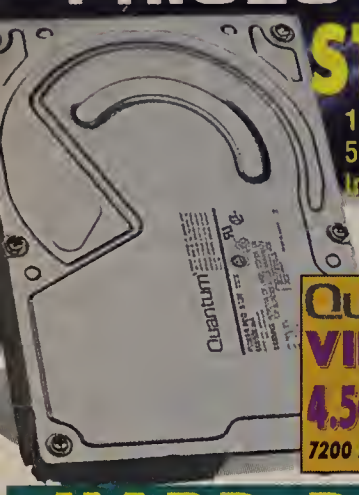
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Internal
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7200 RPM
Internal
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Quantum ATLAS II 9.1GB 7200 RPM Internal $879

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Seagate CHEETAH Fast & Wide 4.5GB 10000 RPM Internal $699

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Quantum

Quantum Stratus drives carry a 3 Year Warranty
Quantum Atlas & Viking drives carry a 5 Year Warranty

Description	Model	Access	RPM	Internal	External
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2.1GB Stratus	QM32160STS	10ms	5400	$229	$279
3.2GB Stratus	QM33240STS	10ms	5400	$299	$349
4.3GB Stratus	QM34320STS	10ms	5400	$339	$389
4.5GB Viking	QM34550VKS	8ms	7200	$499	$549
4.5GB Atlas II	QM34550ALS	8ms	7200	$579	$629
6.4GB Stratus	QM36480STS	10ms	5400	$449	$499
9.1GB Atlas II	QM39100ALS	8ms	7200	$879	$929
UltraWide SCSI-3					
2.2GB Viking	QM32275VKSW	8ms	7200	$419	$499
4.5GB Viking	QM34550VKSW	8ms	7200	$539	$619
4.5GB Atlas II	QM34550ALW	8ms	7200	$619	$699
9.1GB Atlas II	QM39100ALW	8ms	7200	$919	$999
IDE Drives					
1.6GB Stratus	QM31620STA	10ms	4500	$155	----
2.1GB Stratus	QM32160STA	10ms	4500	$189	----
3.2GB Stratus	QM33240STA	10ms	4500	$215	----
4.3GB Stratus	QM34320STA	10ms	4500	$265	----
6.4GB Stratus	QM36480STA	10ms	4500	$349	----

Seagate

Seagate drives carry a 5 Year Warranty

Ultra SCSI-3					
4.5GB Barracuda 4XL	ST34572N	8.5ms	7200	$599	$649
4.5GB Cheetah	ST34501N	8ms	10000	$699	$749
9.1GB Barracuda 9	ST19171N	8ms	7200	$1049	$1099
9.1GB Cheetah	ST19101N	8ms	10000	$1199	$1249
UltraWide SCSI-3					
4.5GB Barracuda 4XL	ST24572W	8.5ms	7200	$649	$729
4.5GB Cheetah	ST34501W	8ms	10000	$749	$829
9.1GB Barracuda 9	ST19171W	8ms	7200	$1089	$1169
9.1GB Cheetah	ST19101W	8ms	10000	$1199	$1279
Fast SCSI-2					
23GB Elite 23	ST423451N	8ms	5400	$1989	$2089
Fast&Wide SCSI-2					
23GB Elite 23	ST423451W	8ms	5400	$2089	$2189

IBM

2.5" IDE HARD DRIVES

1.6GB Travelstar	73H7693	13ms	4000	$199	----
2.1GB Travelstar	73H7673	13ms	4000	$259	----
3.0GB Travelstar	46H6144	13ms	4000	$399	----

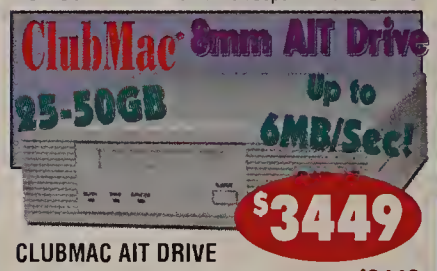
THE CLUBMAC PACKAGE ClubMac drives are preformatted and thoroughly tested. ClubMac drives include a 30-Day Money Back Guarantee, Charismac Anubis Formatting Utility software, user's guide, brackets (wide drives include internal ribbon cable), 25/50-pin SCSI cable and power cord for external drives (wide drives include 68/68 pin SCSI cable).

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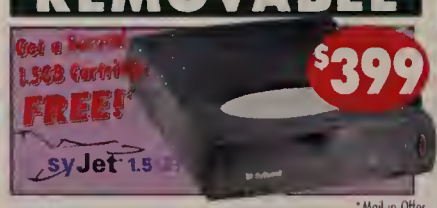
25-50GB 8mm AIT Drive	$3449

All ClubMac Tape Back-up Products are bundled with Retrospect 4.0

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SyQuest SyJet 1.5GB 3.5"	$399
Nomai 750MB 3.5"	$299

SYQUEST MEDIA

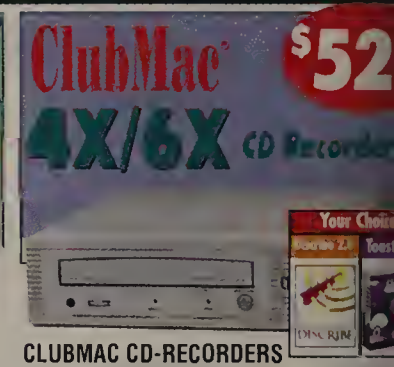
Media	Qty 1	Qty 10	Qty 20
44MB	$38ea	$37.50ea	$37ea
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200MB	$59ea	$58ea	$57ea
270MB	$43ea	$42ea	$41ea
EZ230MB	$27ea	$26.50ea	$26ea
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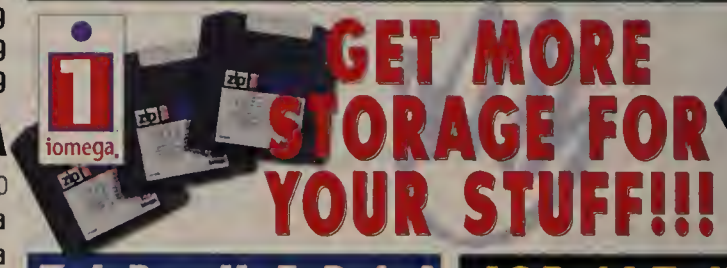


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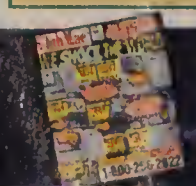


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Format	Part#	Qty 1-2	Qty 3-6	Qty 7-9	Qty 10+
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PC	1040 1009	$19.95	$16.95	$14.95	$12.95

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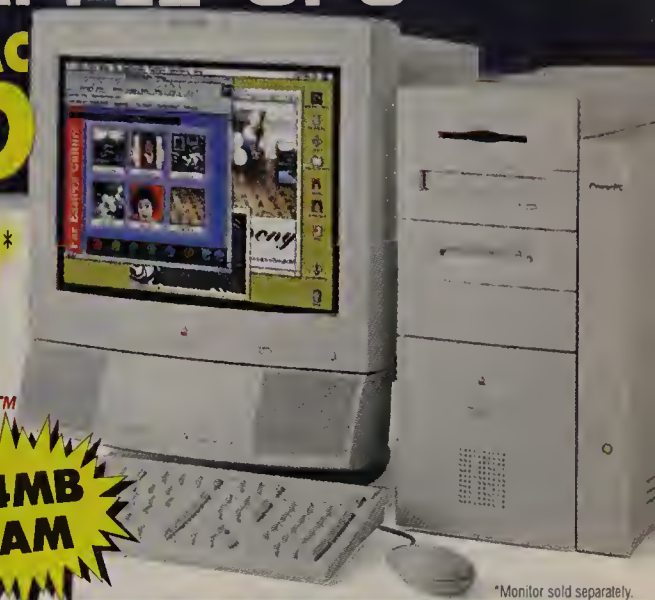
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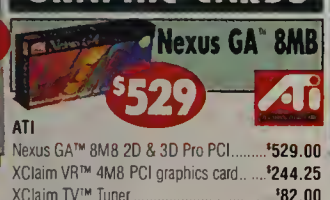
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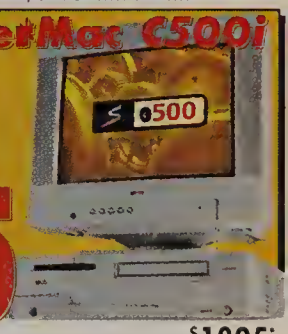
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Apple Macintosh LC630	5	36					20		44			64			169			
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Apple Macintosh SE30	1/2	32					40		96			119			238			
Apple Performa 400	4	10	512k	68		22	30		56									
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Apple Performa 6110CD, 6112CD, 6115CD (pairs)	8/16	72					20		44			64			129			
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Apple Performa 630, 630CD, 636	4	36					20		44			64			129			
Apple Performa 631CD, 636CD, 640CD	8	52					20		44			64			129			
Apple Performa 635CD	5	36					20		44			64			129			
Apple Performa 637CD, 638CD	8	36					20		44			64			129			
Apple Performa 5200 Series 5200CD, 5215CD, 5300	8/16	64					20		44			64			129			
Apple Performa 6100 Series 6116CD (pairs)	8/16	72					20		44			64			129			
Apple Performa 6200 Series 6200CD, 6216CD, 6218CD	8	64					20		44			64			129			
Apple Performa 6200 Series 6220CD, 6230CD, 6290	8	64					20		44			64			129			
Apple Performa 6205CD, 6214CD	8	64					20		44			64			129			
Apple Performa 6300CD, 6320	16	64					20		44			64			129			
Apple Performa 6400CD, 6360 (2K Refresh)	16	136			94												259	
Apple Centris 610, 650, 660 AV	4	132	512k	59			20		44			64			129			
Apple Quadra 605	4	36	512k	59			20		44			64			129			
Apple Quadra 610	4	68	256k	34			20		44			64			129			
Apple Quadra 630	4	36					20		44			64			129			
Apple Quadra 650	4/8	132/136	256k	34			20		44			64			129			
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Apple Quadra 800 (pairs)	8	136	512k	59			20		44			64			129			
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Power Macintosh 5400	8	136			89/119							84			139		259	
Power Macintosh 6100/60, 6100/66, 6100/66AV (pairs)	8/16	72			29/–		20		44			64			129			
Power Macintosh 6200/75	8/16	72			29/–		20		44			64			129			
Power Macintosh 6400/200	8/16	72			89/119		20					84			139		259	
Power Macintosh 6500/225, /250, /275, /300 (Edo)	8/16	72			29/–		20					84			139		259	
Power Macintosh 7100/66, 7100/80, 7100/66AV (pairs)	8/16	136	512k	59	29/–		20		44			64			129			
Power Macintosh 7200/75, /90, /120, /120PC	8/16	256	1mg	49	59/89/209							84			139		259	
Power Macintosh 7300/166, /180, /200, 7500/100	8/16	256/1gig	1mg	49	59/89/209							84			139		259	
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Power Macintosh 8100/80, /100, /110	8/16	264	512k	59	29/109		20		44			64			129			
Power Macintosh 8100/80AV, /100AV, /110AV (pairs)	8/16	264	512k	59	29/109		20		44			64			129			
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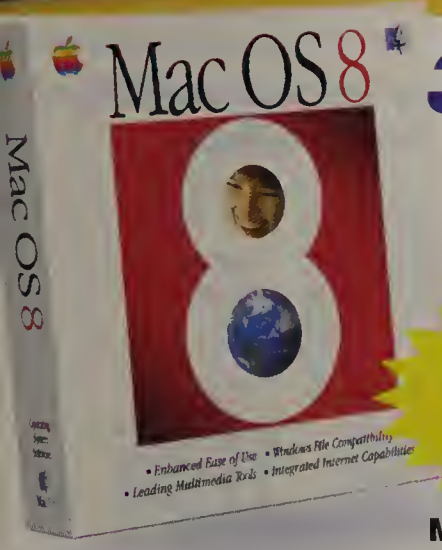
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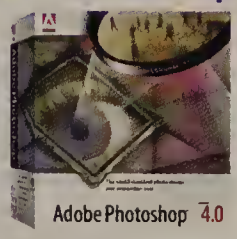
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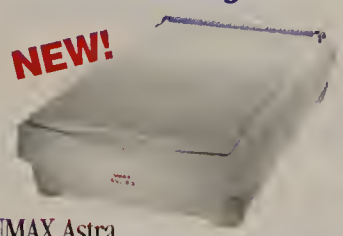
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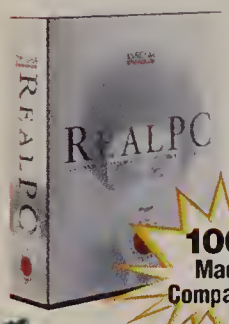
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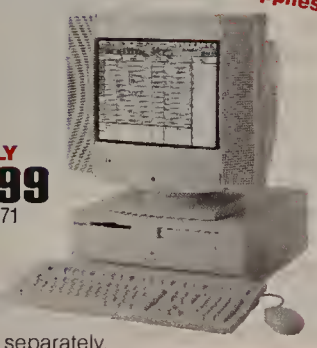
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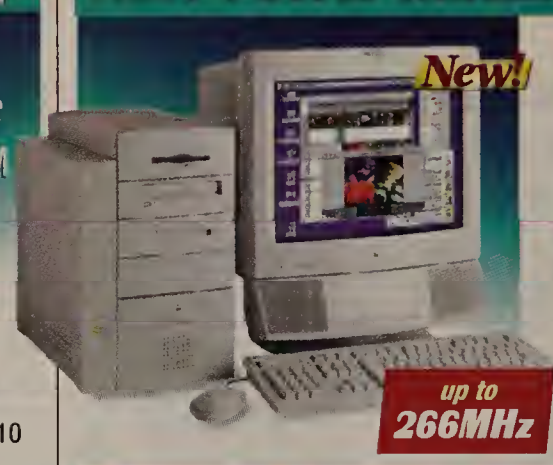
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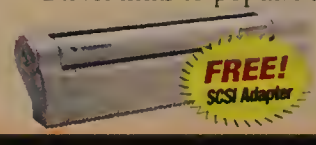
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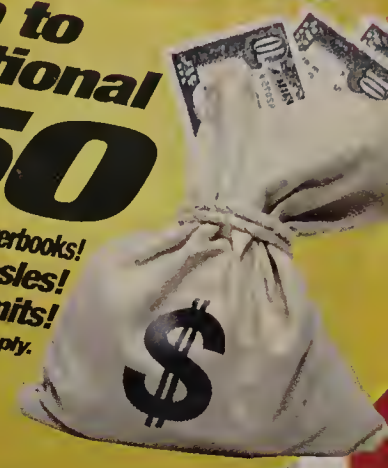
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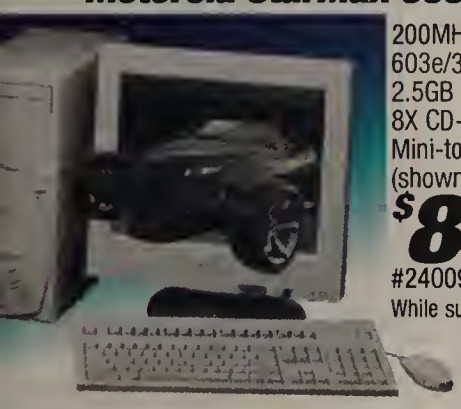
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2.5GB Hard Drive
8X CD-ROM
Mini-tower
(shown at left)

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All monitors on Motorola systems are sold separately

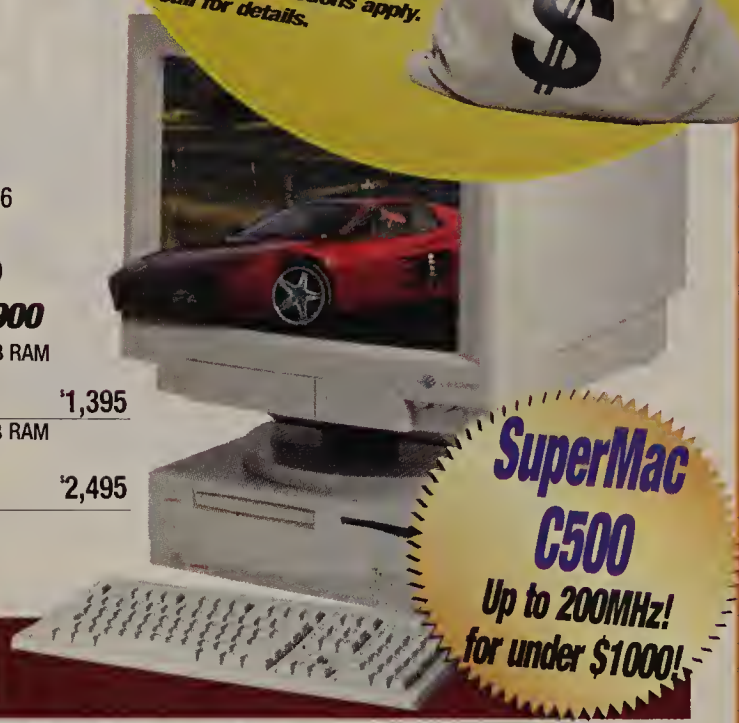
UMAX® Computer Corporation

UMAX C500/200LT

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(shown at right)



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PowerComputing

Power Computing PowerBase 240MT



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#22941 mini-tower (shown at left)

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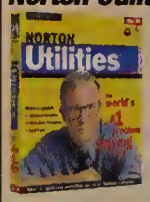


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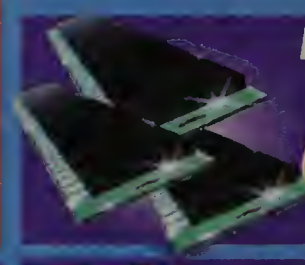


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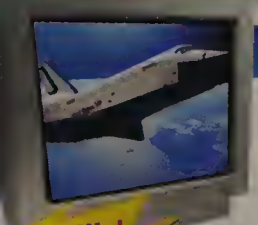
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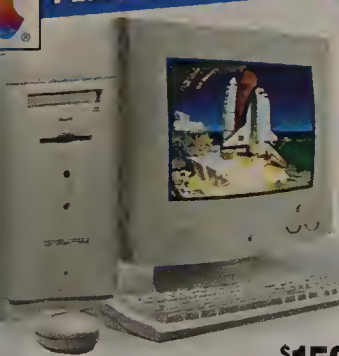
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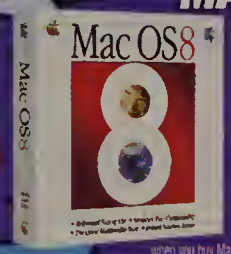
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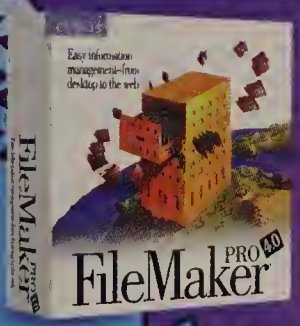
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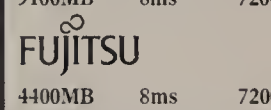
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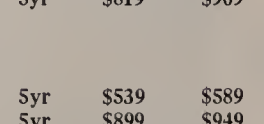
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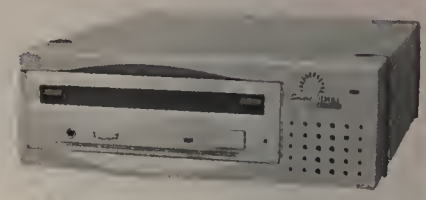
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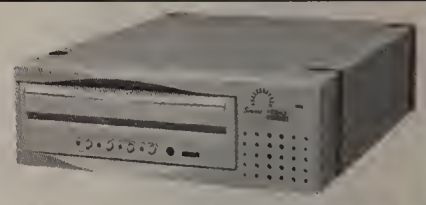
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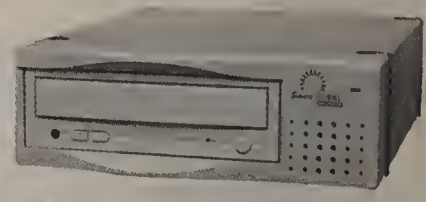
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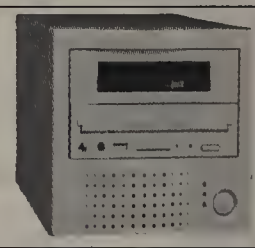
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- 2x record, 6x playback
- High quality Ricoh mechanism.
- Writes to CD-R or CD-RW media.
- Loading: Tray 1MB, Caddy 2MB.
- Includes 5 FREE rewritable CDs.
- Includes #1 rated Adaptec Toast software.

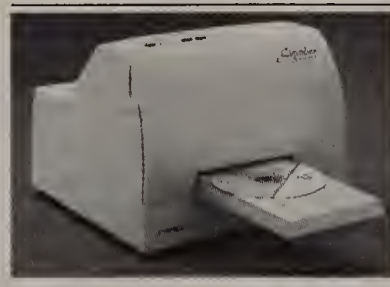
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- Tray loading. 1MB buffer
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Nakamichi	16X	130ms	5 Disk Changer		$289 [MJS16XM]
Plextor	20X	95ms	512K	Tray	$275 [PX20TSM]
NEC	24X	85ms	128K	Tray	$199 [CDR1810XM]
Pioneer	24X	90ms	6 Disk Changer		$439 [DRM6324XM]
Teac	32X	85ms	128K	Tray	$199 [CD532SXM]

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7-14GB, 8mm, DAT, 120MB/min $1549 [ELIANTXM]

SONY
4-8GB, 4mm, DDS-2 DAT, 44MB/min $759 [SDT5000XM]
4-8GB Pro, 4mm, DDS-2 DAT,90MB/min $829 [SDT7000XM]
12-24GB, 4mm, DDS-3 DAT,144MB/min $1109 [SDT9000XM]
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- Microtek ScanMaker III/Trans/Photoshop
- GCC 808 800dpi 11x17 Printer & Enet
- SyJet 1.3GB Drive with 1 cartridge
- Wacom 12x12 Graphics Tablet
- Sony SDT-5000 DAT Tape Backup

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Value DTP Station

7300/200 starting at $1499!

Go Custom



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- IOMega Zip 100 w/ 1 cart
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- Scanmaker V300 color scanner
- 4MB Video RAM
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8600/300 starting at $2399!

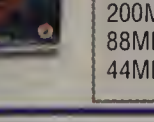


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- Apple keyboard
- Int IOMega Zip 100 w/ 1 cart
- Viewsonic 17EA AV monitor
- Scanmaker v300 color scanner
- ATI 4MB PCI video card
- GCC608 11x17, 600 dpi printer w/ Ethernet connectors
- Wacom 12x12 Graphics Tablet

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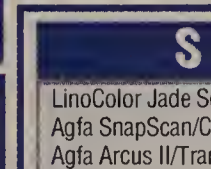
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8600/250 starting at $2079!



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- Radius Thunder 3-D PCI Video
- ScanMaker V300 color scanner
- Strata Studio Pro V2.0 3D Software
- GCC608 11x17, 600 dpi printer w/ Ethernet connectors

Zero Down! $279 per month — $9 a day!! — Free!

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System Description	Price	Lease	
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Apple PowerBook 1400C 133/16MB/1.3GB/6xCD	$1999	$70.59	
Apple PowerBook 3400C 200/16MB/2GB/12xCD	$2699	$96.02	
Apple PowerMac 6500 250/48MB/4GB/12xCD/Zip/Mod	**$1439**	**$50.82**	SALE
Apple PowerMac 6500 300/64MB/4GB/12xCD/Zip	$1759	$61.98	
Apple PowerMac 7300 180/32MB/2GB/12xCD	$1439	$50.82	
Apple PowerMac 7300 200/32MB/2GB/12xCD	$1499	$53.65	
Apple PowerMac 8600 200/32MB/2GB/12xCD/Zip	$1899	$67.77	
Apple PowerMac 8600 250/32MB/4GB/24xCD/Zip	$2079	$73.42	
Apple PowerMac 8600 300/32MB/4GB/24xCD/Zip	$2399	$84.04	
Apple PowerMac 9600 200/32MB/2GB/12xCD/IMS 4MB	**$2199**	**$76.25**	SALE
Apple PowerMac 9600 300/64MB/4GB/24xCD/Zip/IMS 8MB	$2799	$98.85	
SuperMac S900L 250/32MB/4GB/16xCD/IMS 8MB/Zip	$2079	$73.42	
PowerTower Pro 250/128MB/$GB/16xCD/IMS 8MB	$1759	$61.98	

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128MB	$679	NA



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Ricoh 2x/2x/6x Rewrite CDR with Toast/cart	$599
Sony 2x/6xCDR with Toast/cart	$449
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ViewSonic EA 771AV, 1280x1024, .28mm	**$529** SALE
ViewSonic 17GA, 1152x870, .27mm	$578
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Sony 200SF 17", 1280x1024, .25mm	$699
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Tape Drives



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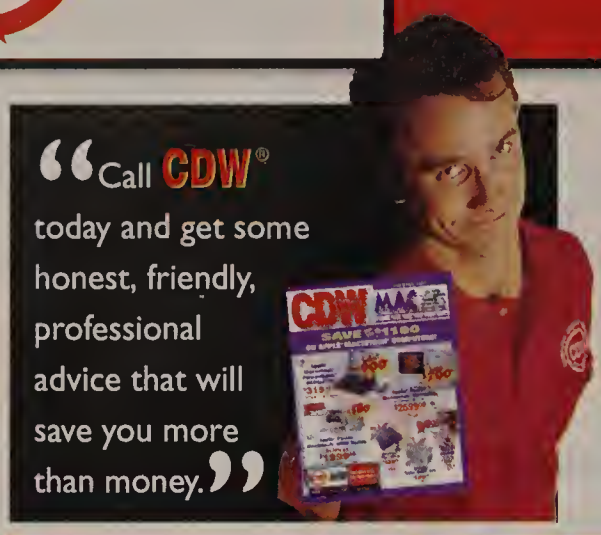
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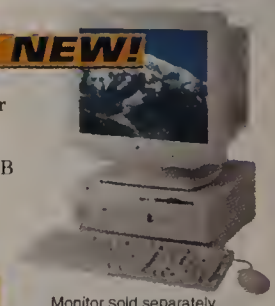
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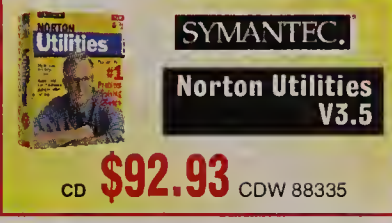
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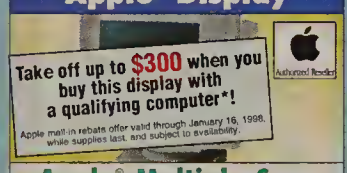
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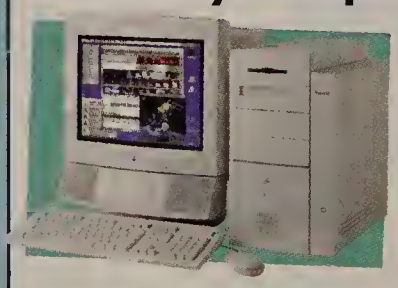
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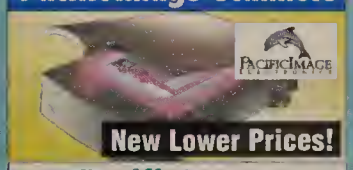


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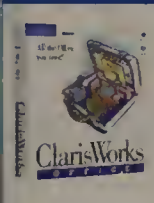


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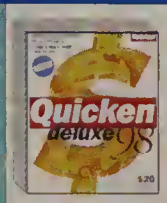
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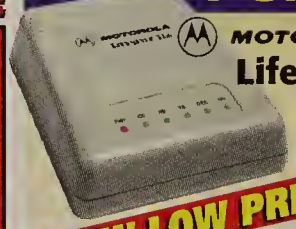
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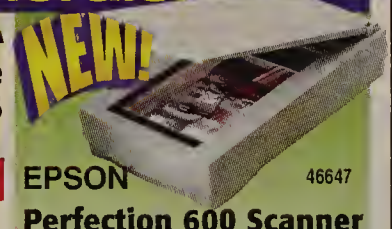


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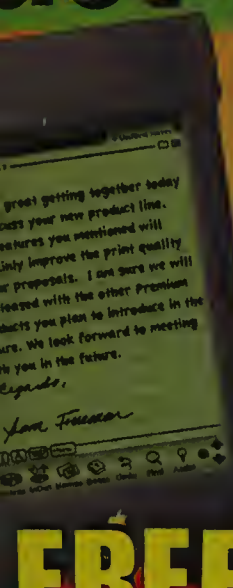
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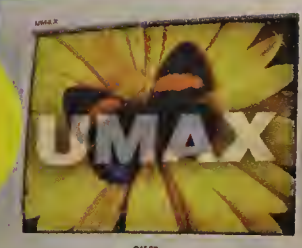
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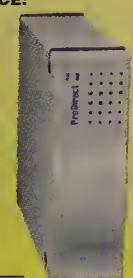
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POWERBOOK 2300

Module	Item#	Price
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36MB	PB2300-36	$250
20MB	PB2300-20	$162
16MB	PB2300-16	$118

POWERBOOK 3400

Module	Item#	Price
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64MB	PB3400-64	$320
32MB	PB3400-32	$151
24MB	PB3400-24	$145

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20MB	PBDUO-20	$139
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POWERBOOK 5300

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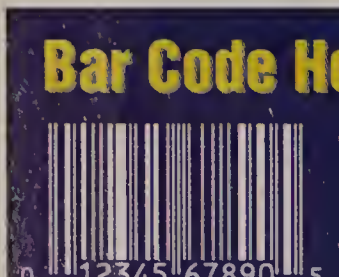
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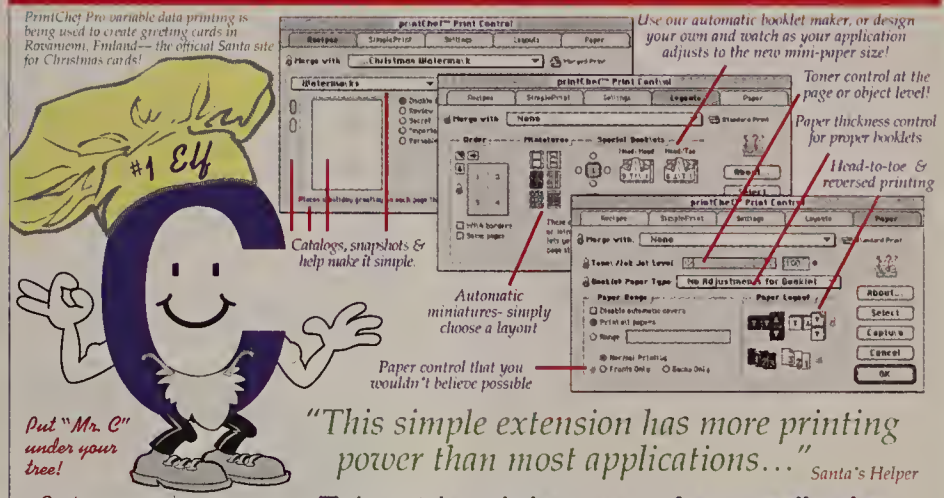
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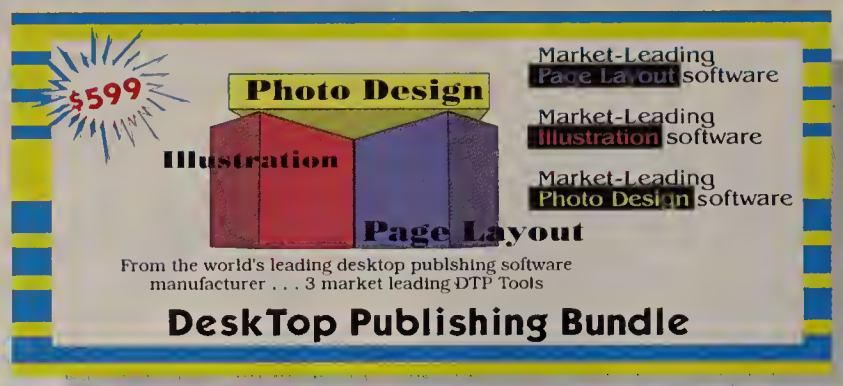
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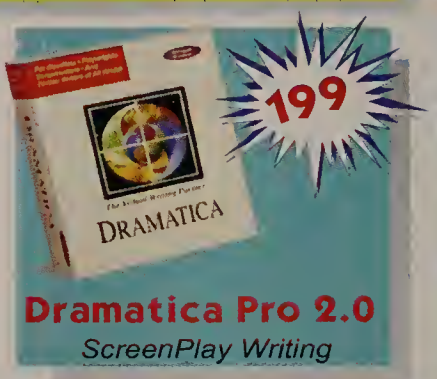
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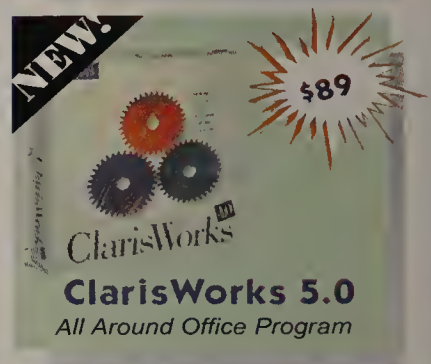
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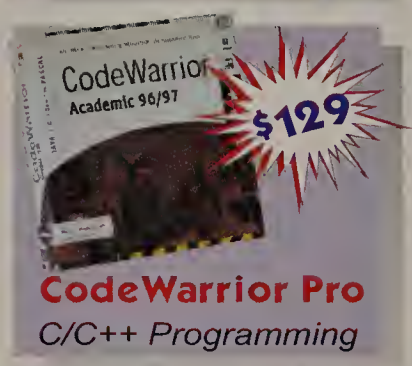


















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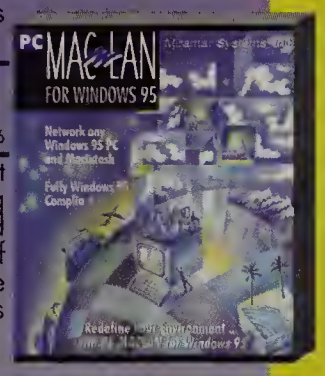
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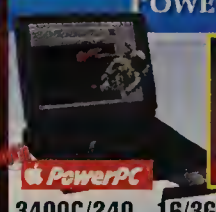


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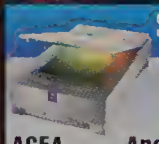
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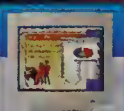
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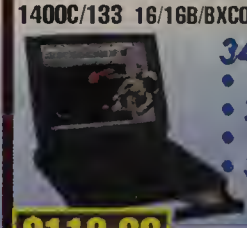
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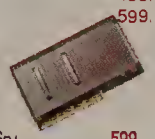
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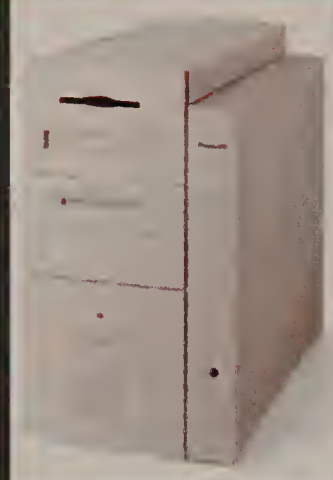
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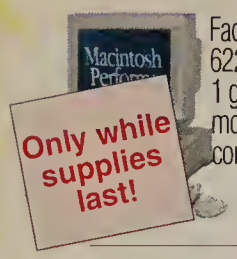
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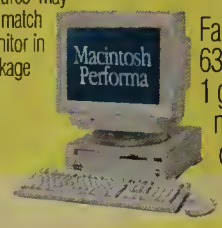
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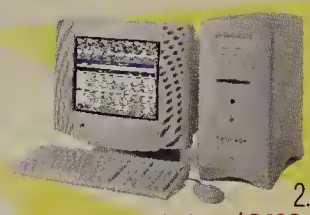
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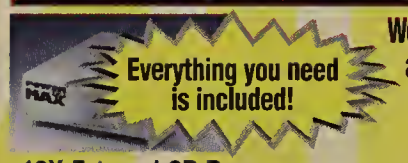
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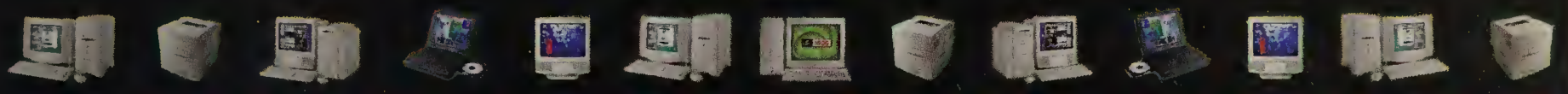
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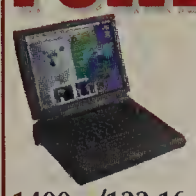
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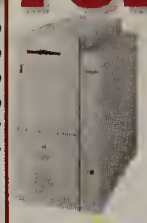
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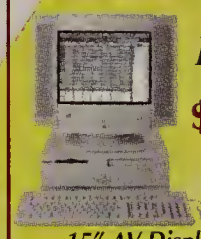
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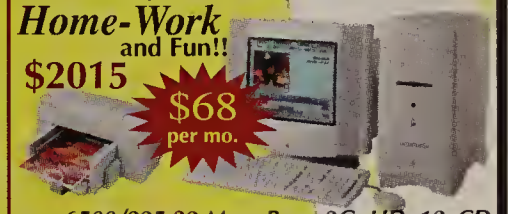
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Photo DV™ & Moto DV™ Starting at $95*

FireWire Technology
•Video capture in real- time,full-motion or still-video,edit ,add effects and save back to tape w/ no loss!
¥ Camcorder not included! *MotoDV™upgrade!

•Radius Moto DV w/ FireWire Card Full-Motion Video Capture	$439.00
•Radius Photo DV Still-Image Video Capture	$439.00
•Radius VideoVision ML	$1,899.00
•Radius VideoVision SP Upgrade PCI	$1,699.00
V 2.0 PCIPowerMac	$2,399.00

Printers

Stylewriter 1500 $139.

Apple

Color Stylewriter 2500	$199.00
Laserwriter 4/600	$679.00
Laserwriter 12/640	$1,199.00

Epson

Stylus Photo	$449.00
Stylus Color 600	$285.00
Stylus Color 800	$409.00
Stylus Color 1520	$729.00
Stylus Color PRO XL	$999.00
Stylus 3000	$1,699.00

HP

DeskJet 340c	$269.00

Epson Stylus 800 $409

ArtPads

4" X 5" art Z II $129

ArtPad II 4"X5" WACOM

Art Z II 6"X8"	299.00
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Art Z II 12"X18"	659.00
Art Z II 18"X25"	1,699.00
Ultra Pen	65.00
4-button puck	38.00

Apple Message Pad 2000

- 160Mhz RISC proc.
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- 2 PC Slots for memory and wireless modem or any other compatible card.
- Exchange data with Windows and Mac OS
- Built-in mic/speaker (optional keyboard for $ 75.)

162 MHz
weighs Only 2lb

$899.

†Modem not included

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ScanMaker E6	$279.00
ScanMaker III	$1,199.00

Model not shown !

ScanMaker V300 $129

- 24-bit color depth
- Single-pass speed
- 300x600 dpi optical resolution

Agfa

SnapScan	$269.00
StudioStar	$699.00
Arcus II (PhotoLook)	$1,299.00

Umax

Astra 600	$179.00
Astra 1200 (soho)	$299.00
Astra Transp. Adapter	$179.00
PowerLook II	$899.00
√Power Look 2000	$1,999.00

√ - after manufacturer's rebate

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ON THE MAC MARKET!

Software

Business



Microsoft Office 4.2.1
Full version

$299.

Microsoft
Microsoft Office 4.2.1 (full version)....$299.
Office 4.2.1 (upgrade)....$199.
Microsoft Word 6.0.1 (full version)....$269.
Microsoft Excel 5.0 (full version)....$269.
Microsoft Excel 5.0 (upgrade)....$119.

Now Software
Now Contact and Up-to-Date 3.6.5....$79.

Shana
Informed Designer 2.0 (form designer)....$189.
Informed Filler (form filler)....$129.

Timeslips
Timeslips 4.0....$279.

Design / Graphics

Adobe Photoshop 4.0
Upgrade

$129.



Adobe Systems
PageMaker 6.5 (full version)....$389.
PageMaker 6.5 (upgrade)....$89.
Photoshop 4.0 (full version)....$389.
Photoshop 4.0 (upgrade)....$129.
Illustrator 7.0 (full version)....$299.
Illustrator 7.0 (upgrade)....$89.
FrameMaker 5 (full version)....$479.
Streamline 4.0 (full version)....$129.

Artifice
Design Workshop 1.5....$569.

Astound
Astound 3.0 (presentation w/ multimedia)..$126.

Deneba
Canvas 5.0 (design & illustration)....$379.

Engineered Software
Power CADD 3.0 (pro-level draft-prog.)....$639.

Fractal Design
Detailer (Paints 3D models)....$289.
Expression 1.0 (object-oriented drawing)....$289.
Painter 5.0 (full version)....$259.
Painter 5.0 (upgrade)....$89.
Poser2.0 (human-models in 3D envir.)....$129.

Graphsoft
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BluePrint 5....$199.

Painter 5.0



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Macromedia
Director 6 multimedia studio (full version)....$899.
Director 6 multimedia studio (upgrade)....$459.
Macromedia xRes 3....$299.
Director 6 (upgrade)....$369.
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FreeHand 7 - graphics studio

Upgrade

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Full Version $299



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Macromedia Flash (full version)....$189.
Fontographer(full version)....$299.

Quark Xpress 4.0



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Quark
QuarkXpress 3.3.2 (publishing)....$619.
QuarkXpress 4.0 (publishing+Web)....$699.

Specular
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Infini-D 4.0(upgrade)....$149.
Collage 2.0 CD....$79.

Others
Eye Candy 3.0 (Photoshop filters)....$189.
Object Dancer 1.1 (Object-oriented animat.).$419.
Phototools 1.1(Photoshop filters)....$94.
Texture Creator 2.0 (Pro Level 3D graphics).$125.
Walkthrough 2.6 (Architectural design)....$449.

Internet / Database

•Instant Database publishing on the Web/
•Desktop publishing with Database content/
•Launch Java applets and much more...

Upgrade

$95.

FileMaker 4.0



Claris
FileMaker Pro 4.0 (FullVersion)....$189.
Claris Home Page....$94.
Claris Works Office....$94.
Claris E-Mailer 2.0 (e-mail manager)....$39.

Farallon Communications
Timbuktu Pro 3.0....$125.

Net Objects
Net Objects fusion 2.0(Website builder)....$449.

RUN
RunShare 2.1(AppleTalk network 2-users)...$289.

StarNine tech.
Quarter Deck Mail 4.0 (Mail server)....$299.
Quarter Deck Mail 4.0 (5-user pack)....$199.

Symantec
Symantec Visual café....$194.
Symantec Visual Page....$94.



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Upgrade from V.5.0 or later

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•reliable
• complete
• graphics
•Application

Now

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Utilities/Programming

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Casady & Greene
Conflict catcher 4.0.2 (Start-Up tool)....$69.

Connectix
Speed doubler 2.0.1. (file transfer utility)....$89.
RAM doubler 2.0.1. (Doubles your RAM)....$89.

Datawatch
Virex 5.7 (great features in virus-detection)....$67.

Metrowerks
Code Warrior 10 gold(programming)....$339.

mFactory
mTropolis 1.1 (authoring tool)....$1099.

Now soft.
Now utilities 6.7....$85.

Starnine tech
ListStar 1.1 (mailing-list management)....$429.

Symantec
SAM 4.5 (virus protection)....$49.*

Effects/Plug-ins/Media

Adobe After Effects 3.1



•Broadcast multimedia and Film production Tool!

Now

$399.

Adobe
Premiere 4.2 (full version)....$399.
Persuasion 4.0 (full version)....$299.

Allegiant Tech
SuperCard 3.0 (authoring tool w/ web plug-in)....$299.

Artel Software
Boris Effects 2.1 MP (Adobe plug-in)....$499.

DigiEffects
Aurorix 2.0 (full version)....$249.
Berserk 1.3 (full version)....$249.
Cyclonist 1.0 (particle-generation soft.)....$429.

Extensis
QX-Tools 2.0 (Xtensions-collection)....$94.

Knoll soft.
Lens Flare Pack 1.5 (after effects plug-in)....$139.

MetaTools
Bryce 2....$168.
Final Effects AP 1.0 (particle-generation)....$189.
KPT Final Effects 3.0.1 (effects collection)....$659.
Studio Effects 1.0 (3D particle-generator)....$659.

M.M.M. Soft.
HoloDozo 1.0 (Adobe Premiere plug-in)....$129.

NewTek
LightWave 3D (Pro-Level animation)....$1399.

The Valis Group
Movie Flow 2.0.2. (image distortion soft.)....$639.

XaosTools
TypeCaster 2.0 (3D text-plug-in)....$169.

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$399

W/ Free! Bundled Software

Others/Various

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Dantz Retrospect 4.0 (net. back-up) ....$139.
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Live Picture XT....$138.
Prism 2.0 (Ideal statistics package)....$459.
QuickKeys 3.5.2 (Powerful Macro Utility)....$115.
Roaster Release 3 (Java Tools)....$95.
SoftWindows 95 v.4.0....$299.
Ultimatte for Mac 2.0 (Keying plug-in)....$1399.
Wingz 2.1.1 (Powerful progr. tool))....$369.

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JAZ DRIVE



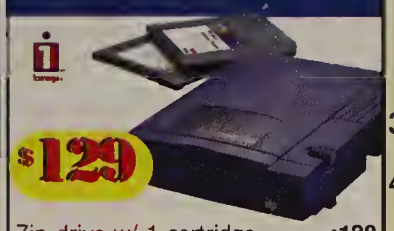
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Zip 100MB cart. (10-pack)....$125
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200 Megabytes cartridge....$52
270 Megabytes cartridge....$45

CD-ROM
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LaCie 12X CD-ROM (free Lacie FM Radio)....$179
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Quantum	ST2160S	10 Ms	5400	Ultra SCSI-3	128k	$229	$279
Quantum	Atlas 32275	8 Ms	7200	Ultra Wide SCSI-3	512k	$289	$339
IBM	32160W	8.5 Ms	5400	Ultra Wide SCSI-3	512k	$229	$279
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Fujitsu	M2934SAU	8 Ms	7300	Fast SCSI-2	512k	$559	$599
Fujitsu	M2954SYU	8 Ms	7300	Ultra SCSI-3	512k	$599	$649
IBM	DCAS-34330	8.5 Ms	5400	Ultra SCSI-3	512k	$399	$449
IBM	DCAS-34330W	8.5 Ms	5400	Ultra Wide SCSI-3	512k	$399	$449
Quantum	CY54335A	14 Ms	3600	EIDE-4	128k	$259	$319
4.5 GB							
Seagate	ST34501W	8.5 Ms	10033	Ultra Wide SCSI-3	512k	$699	$749
Micropolis	MC4345WS	7.9 Ms	7200	Ultra Wide SCSI-3	512k	$599	$649
Seagate	ST34572W	8.9 Ms	7200	Ultra Wide SCSI-3	512k	$699	$749
Quantum	AL34550S	8 Ms	7200	Ultra SCSI-3	512k	$549	$599
Quantum	AL34550SW	8 Ms	7200	Ultra Wide SCSI-3	512k	$599	$649
6.5 GB							
Quantum	QTST6480s	10 Ms	5400	Ultra SCSI-3	128k	$469	$519
9.1 GB							
Micropolis	3391NS	7.9 Ms	7200	Ultra SCSI-3	512k	$949	$999
Quantum	AL39100SW	8 Ms	7200	Ultra Wide SCSI-3	1024k	$899	$949
Seagate	19171N	9 Ms	7200	Ultra SCSI-3	512k	$990	$1050

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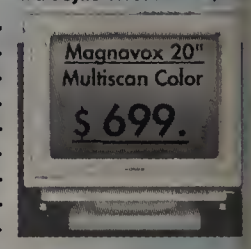
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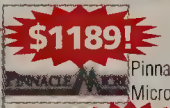
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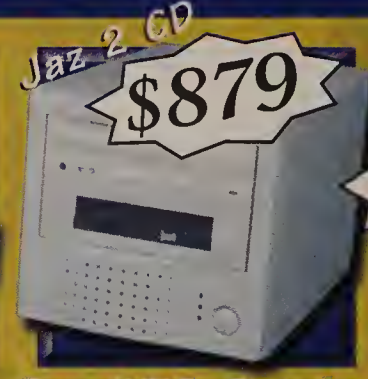
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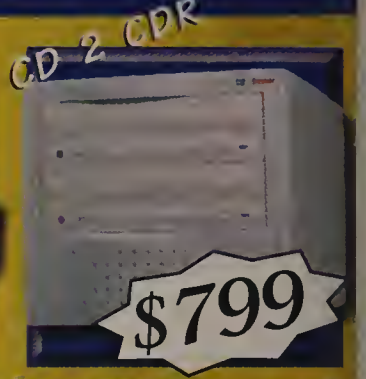
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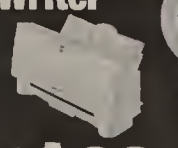
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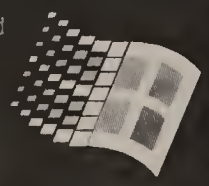
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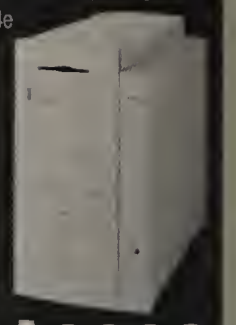
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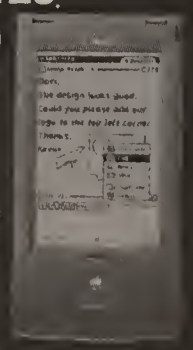
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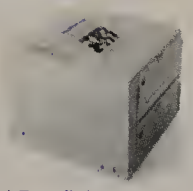
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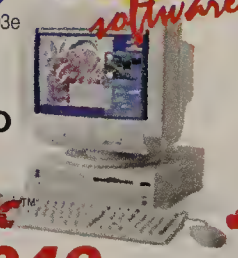
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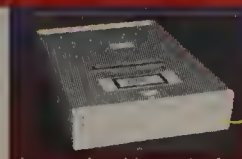
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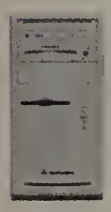
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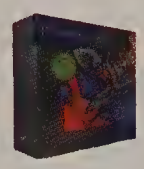
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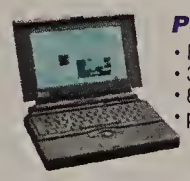
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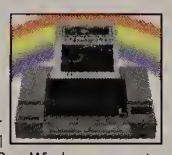
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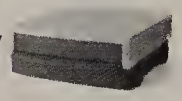
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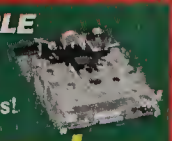
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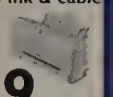
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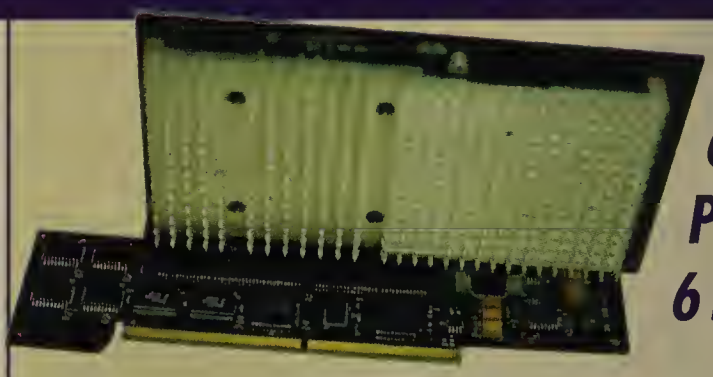
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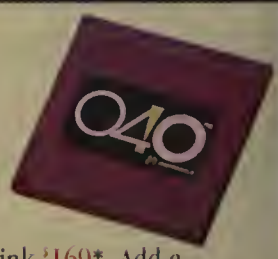
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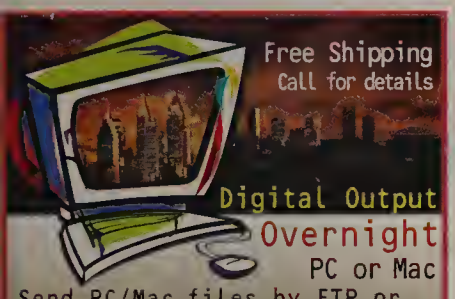
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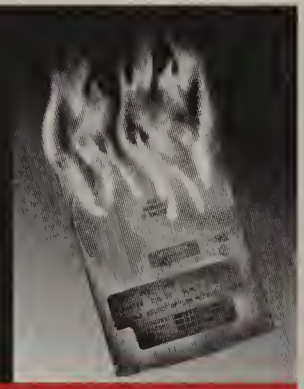
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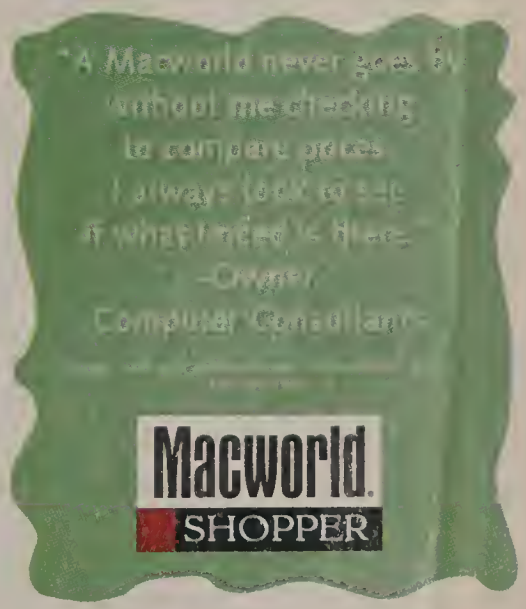
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- "MacOS8, Features and Benefits" by Apple
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"Bartender!" shouts Steve. "You don't have a copy of *Wired* here, do you? I've got to read up on this crazy reality!"

The bartender glares. "I don't know what *you're* wired on, pal, but either stop talking crazy or get outta my shop."

"No such thing as *Wired*," whispers Claris. "Never was. Before you wished the Mac away, most magazines were produced entirely on the Mac. Besides, *Wired* would be awfully thin without the Web."

"Without the—now, wait just a minute!" Horrified, Steve rushes over to one of the PCs and connects to the Internet. "You call this the Net? It looks like a text-only BBS—and there's practically nobody online! Where's Navigator? Where's Internet Explorer? Where's the *Web*, for Pete's sake?"

"Oh, I see," Claris smiles sympathetically. "You must be referring to all those technologies that spun off from the concept of a graphic interface. Look, Steve. Until the Mac made the mouse standard, there was no such thing as point and click. And without clicking, there could be no Web . . . and no Web companies. Believe it or not, Marc Andreesen works in a Burger King in Cincinnati."

Steve scoffs. "Well, look, if you apply that logic, then PageMaker wouldn't exist either. Photoshop, Illustrator, FreeHand, America Online, digital movies—*all* that stuff began life on the Mac."

"You're getting it," Claris says. He holds up a copy of *Time* magazine. "Check out the cover price."

Steve gasps. "*Eight bucks?* They've got a lot of nerve!"

"Labor costs. They're still pasting type onto master pages with hot wax."

"You're crazy!" screams Steve. "I'm going back to my office at Apple!" He drives like a madman back to Cupertino—but the sign that greets him there doesn't say, "Welcome to Apple." It says, "Welcome to Microsoft South."

"Sorry, Steve; Apple went out of business in 1985," says Claris. "You see, you really did have a wonderful machine! See what a mistake it was to wish it away?"

Steve is sobbing, barely listening. "OK, then—I'll go to my office at Pixar!"

"You don't *have* an office at Pixar," Claris reminds him. "There was no Mac to make you rich enough to *buy* Pixar!"

Steve has had enough. He rushes desperately back to the icy bridge over the river. "Please, God, bring it back! Bring it back! I don't care about market share! Please! I want the Mac to live again!"

Music, wind, heavenly voices—and then snow begins softly falling.

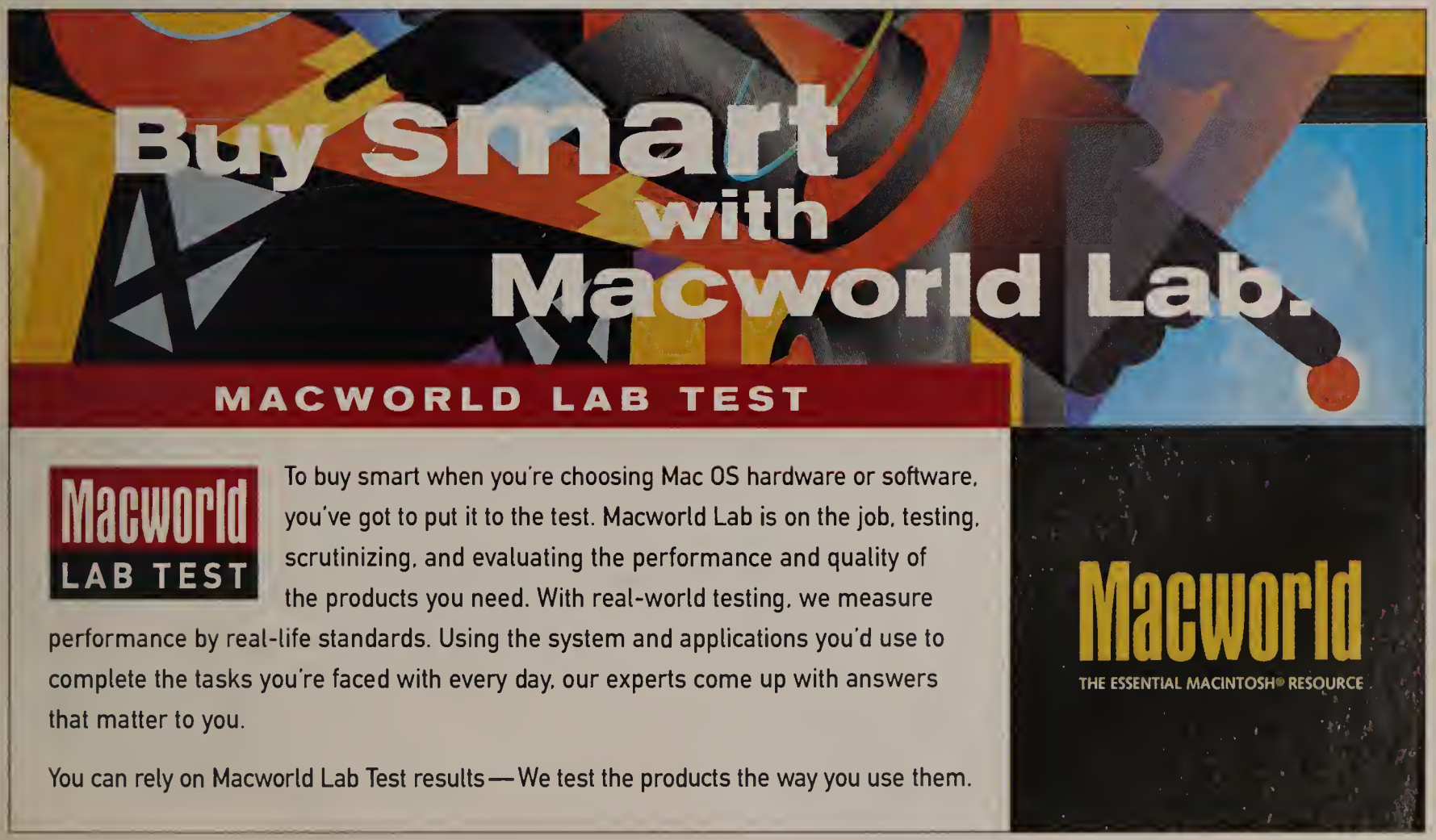
"Hey, Steve! You all right?" calls out Steve's friend Larry from a passing helicopter. Steve pats his pocket—the Newton is there again! It's all back! Steve runs through the town, delirious with joy. "Merry Christmas, *Wired!* Merry Christmas, Internet! Merry Christmas, wonderful old Microsoft!"

And now his office is filled with smiling people whose lives the Mac has touched. There's old Mr. Chiat/Day the adman. There's Yanni the musician. And there's Mr. Spielberg the moviemaker. As the Apple board starts singing "Auld Lang Syne," somebody boots up a Power Mac.

Steve smiles at the startup sound. "You know what they say," he tells the crowd. "Every time you hear a startup chime, an angel just got his wings." ■

DAVID POGUE's latest book is *The Microsloth Joke Book* (Berkeley, 1997). If the World Wide Web still exists, his home page is www.pogueman.com.

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The Desktop Critic

by David Pogue

It's a Wonderful Machine

THE SWEETEST CHRISTMAS MOVIE FRANK CAPRA NEVER MADE

I GUESS I SHOULDN'T HAVE gone to a party where the eggnog was spiked, and maybe I shouldn't have watched the movie *It's a Wonderful Life* while leafing through *MacWeek*. But anyway, I had the *weirdest* dream last night—like a bizarre black-and-white movie that went like this: Jimmy Stewart stars as Steve "Jobs" Bailey, who runs a beleaguered but beloved small-town computer company. For years, big monopolist Bill "Gates" Potter has been wielding his power and money to gain control of the town. And for years, Steve has fought for survival: "This town needs my measly, one-horse computer, if only to have something for people to use instead of Windows!"

But now an angry mob is banging on Apple's front door, panicking. "The press says your company is doomed!" yells one man. "You killed the clones! We're going to Windows!" calls another. "We want out of our investment!" they shout.

Steve, a master showman, calms them. "Don't do it! If Potter gets complete control of the desktop, you'll be forced to buy his bloatware and pay for his cruddy upgrades forever! We can get through this, but we've got to have faith and stick together!" The crowd decides to give him one more chance.

But the day before Christmas, something terrible happens: On his way to the bank, the company's financial man, Uncle Gilly, somehow manages to lose $1.7 billion. With eyes flashing, Steve grabs the befuddled Gilly by the lapels. "Where's that money, you stupid old fool? Don't you realize what this means? It means bankruptcy and scandal! Get out of my company—and don't come back!"

Desperate and afraid, Steve heads to Martini's, a local Internet café, and drowns his sorrows in an iced cappuccino. Surfing the Web at one of the café's Macs, all he finds online is second-guessing, sniping by critics, and terrible market-share numbers.

As a blizzard rages, Steve drives his car crazily toward the river. "Oh, what's the use?!" he exclaims. "We've lost the war. Windows rules the world. After everything I've worked for, the Mac is going to be obliterated! Think of all the passion and effort these last 15 years—wasted! Think of the billions of dollars, hundreds of companies, millions of people . . . ." He stands on the bridge, staring at the freezing, roiling river below—and finally hurls himself over the railing.

After a moment of floundering in the chilly water, however, he's pulled to safety by a bulbous-nosed oddball. "Who are you?!" Steve splutters angrily.



"Name's Clarence—I mean Claris," says the guy. "I'm your guardian angel. I've been sent down to help you—it's my last chance to earn my wings."

"Nobody can help me," says Steve bitterly. "If I hadn't created the Mac, everybody'd be a lot happier: Mr. Potter, the media, even our customers. Hell, we'd all be better off if the Mac had *never been invented at all!*"

Music swirls. The wind howls. The tattoo on Steve's right buttock—Buzz Lightyear from *Toy Story*—vanishes.

Steve pats the empty pocket where he usually carries his Newton. "What gives?"

"You've got your wish," says Claris. "You never invented the Mac. It never existed. You haven't a care in the world."

"Look, little fella, go off and haunt somebody else," Steve mutters. He heads over to Martini's Internet café for a good stiff drink. But he's shocked at the difference inside. "My God, look at the people using these computers! Both of them—they look like math professors!"

"They *are*," says Claris.

"What is this, a museum? It looks like those computers are running DOS!"

"Good eye!" says Claris. "DOS version 25.01, in fact—the very latest."

"I don't get it," Steve says.

"DOS is a lot better and faster these days, but it hasn't occurred to anybody to market a computer with icons and menus yet. There's no such thing as Windows—after all, there never was a Mac interface for Microsoft to copy."

"But this equipment is ancient!" Steve exclaims. "No sound, no CD-ROM drive, not even 3.5-inch floppies!"

"Those aren't antiques!" Claris says. "They're state-of-the-art Compaqs, complete with the latest 12×, 5-inch–floppy drives. Don't forget, Steve: The Mac introduced and standardized all that good stuff you named."

"But that's nuts!" Steve explodes. "You mean to tell me that the 46 percent of American households with computers are all using *DOS?*"

"Correction: All *9* percent of American households," says Claris cheerfully. "Without a graphic interface, computers are still too complicated to be popular."

continues on page 193

PETER HOEY

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